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ABSTRACT

These proceedings contain 70 papers and summaries of panel discussions and workshops. Selected titles are as follows: "Consumer Access to Health Care" (Jones); "Credit Education for the Disadvantaged Consumer" (Schuchardt et al.); "The Jouranl of Consumer Affairs" (Herrmann et al.); "The Consumer's Role in a Changing Marketplace" (Edwards); "Developing Curricula in Consumer Affairs" (Widdows); "Developing an Internship Program" (Douthitt); "CRIS (Consumer Response Information System) in Class" (Hay); "What Business Consumer Affairs Professionals Want in Graduates" (Brady); "What Consumer Economics Textbooks Say about Service Contracts" (Ackerman); "Children and Consumer Decision Making a la Carte" (Coon, Peterson); "Adoption of Financial Planning Practices by Midlife and Older Women" (FitzGerald, Foster); "Financial Freeway: A Financial Management Program for the High School" (Haldeman, Crites); "EFNEP Plus: A Money Management Calendar and Education Program for EFNEP Clientele" (McRee et al.); "A Financial Counseling Prototype: Implications for Use of Expert Systems Technology In Extension Programming" (Smith); "'It's One Day at a Time because Tomorrow's Not a Promise': An Audience Analysis for Financial Management Education" (Swanson); "Consumer Interest of Minority Market Segments and Marketplace Problems" (Snuggs); "Federal Government Promotes Minority Consumer Outreach" (Yates); "Cultural Diversity and Consumer Literacy" (Hemphill); "Value of Time in Household Work: Estimates from the NLS Data" (Duncan); "Making Consumer Education 'Green'" (Cude); "Life and Death Health Care Decisions: Legal Rights, Policy Trends, and Consumer Education Challenges" (Stum, Goebel); "Consumers Want a Government Program for Health Care" (Lipsen); "Modeling and Simulation as a Consumer Economics Research Tool" (Widdows, Widdows); "Consumer Decision Making in a Global Context" (Lusby); "Examining the Influence of Values and Lifestyles on Environmental Decisions" (Stum); "Educating and Motivating Consumers to Manage Household Waste" (Bowen); "A Call to Arms: Defending and Strengthening Consumer and Family Economics Programs in the Face of the Budget Stringencies of the 1990's" (Metzen); "Proposed Elimination of the Consumer Economics Program at the University of Maryland" (Dardis); "Teaching Consumer Affairs from a Distance" (Adams); "College Student Time Use and Formation of Human Capital" (Pritchard); "Sharing Ideas for Teaching Intermediate Consumer Economics Micro-Theory Courses" (Weagley, Joesch); "Consumer Economics Professors Should Actually Profess Something" (Garman); and "ERIC Database: Information for the Asking!" (Wagner). (NLA)

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PROCEEDINGS

38th Annual Conference

of the

AMERICAN COUNCIL ON CONSUMER INTERESTS

March 25 - 28
Toronto, Ontario, Canada

Virginia A. Haldeman, Editor

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AMERICAN COUNCIL ON CONSUMER INTERESTS
38TH ANNUAL CONFERENCE
March 25-28, 1992

Toronto, Ontario, Canada

Wednesday, March 25

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FROM THE EDITOR

The 38th Annual Conference of the American Council on Consumer Interests was held in Toronto, Ontario, Canada. This was the first time that the Annual Conference had been held outside of the United States. The international conference featured presentations by consumer educators and professionals from the United States, Canada, Australia, and Europe. The second Esther Peterson Policy Forum featured the director of the International Organization of Consumers Unions Regional office got Europe and North America.

Of the 33 manuscripts submitted for consideration as refereed papers, 19 were accepted for presentation (42% rejection rate). The refereed papers addressed such widely ranging topics as the health care, financial planning, consumer behavior, and consumption.

Fourteen refereed posters were accepted for presentation at the conference from 19 submitted (26% rejection rate). The posters presented research and educational programs regarding financial management and counseling as well as diverse aspects of consumer behavior.

In addition to the refereed paper sessions, and the refereed poster session, conference participants were able to choose to attend a variety of invited paper sessions, panel discussions, workshops, and roundtables. The 3 invited paper sessions featured 9 speakers; the 5 panel discussions included 21 presentations; 6 workshops featured a total of 14 participants; and there were 7 roundtable presentations.

All those who made presentations at the conference were invited to submit camera-ready manuscripts or abstracts to be included in this publication. This was the first year that manuscripts were submitted on disk accompanied by a hard copy in a reduced sized font. The cooperation of the authors and their support staffs was essential in making this transition possible.

The program chair, Brenda Cude, is to be commended for her work in presenting an informative and challenging program which was truly international. The preliminary work in reviewing manuscripts is greatly appreciated. Their efforts enhance the quality of the conference and makes the job of editor much easier!

Many thanks to Dick Vosburgh for inviting us to Canada and for being a superb host! The accommodations were outstanding, the extra events were special, and the weather was terrific! Toronto is a beautiful city that treats visitors very well.

I wish to extend special thanks to Anita Metzen and to the Board of Directors for their support in initiating the change in the submission format for the Proceedings. This would not have been possible without my Administrative Assistants, Sherry Stevens and Charla Purinton. Sherry's input into the development of the instructions for authors was most helpful. Charla's cheerful words, "We can do it!" saved me (and many of you) more than once! Thank you for the opportunity to serve as your editor.

Virginia A Haldeman

Virginia A. Haldeman
University of Nevada, Reno

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Consumer Access to Health Care: Basic Right
21st Century Challenge

Mary Gardiner Jones, President [1]

Today, this country is confronting a crisis in health care of broad and critical dimensions. Dwarfing all others is the issue of the consumer's right to affordable quality comprehensive health care.

This paper will deal first with the dimension of the health care crisis confronting this country. It will then consider the major proposals for health care reform and finally, it will examine the role of the consumer movement and of ACCI in ensuring that the consumer's interests will be protected in the current debate on how best to provide equitable and affordable health care to all Americans without regard to the individual's ability to pay.

I. The Health Care Crisis in the United States

The Uninsured: Thirty eight million people in the United States have no health care insurance and thus lack access to the most basic right in the United States: the right to affordable quality health care. An additional 56 million people are estimated to be underinsured or to lack health care insurance for some period of time in a given year, thus raising the specter of being without critical health care coverage when it may be most needed. Since 1980, the number of uninsured has risen by one million each year.

Nine million women of child bearing age have no health insurance. Twenty three and twenty six percent of black and hispanic women respectively are uninsured. Fifteen percent of the nation's children - 9.2 million- have no insurance. Employees of entire industries such as logging, hair stylists, roofing companies, taverns, mining and medical offices, entertainers and sports are barred from insurance by the industry as high risk occupations (Paula Braveman et al.).

It is estimated that 20% of the American people are either totally without health coverage or lack coverage for some period of time in any given year. Three quarters of the uninsured are employed or are dependents of employees. One half of the working uninsured are employed by small business with 10 or fewer employees (Washington Post, 2/22/92). Many of the uninsured are self employed, part time and seasonal workers and workers whose employers do not choose to cover them.

The Underinsured: Even people who do have health insurance coverage live in constant fear that when they will need to use their health insurance it will not cover their particular condition or the deductibles and co payments will be so great that they will not be able to afford the care they need. They are equally fearful that they will lose their decides to change or withdraw their coverage, raise coverage if their employer or insurance company their premiums, merge with another company or go out of business. Thirty per cent of employees reported in a recent poll that they were afraid to change jobs for fear of losing their health insurance. For individuals, typically women and children, whose health insurance coverage is dependent on their working spouse or parent, any change in that status -- divorce, widowhood or simply growing up -- poses a constant threat to their health care coverage (New York Times, 12/20/91).

Medicare and Medicaid: Efforts by

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[1] Consumer Interest Research Institute
Washington, D.C.

government to supplement our work place oriented health care system have proved equally inadequate. Even with medicare, the elderly are paying almost 20% of their income on medical expenses. The average medicare household is spending $3,305 on out of pocket costs for insurance premiums compared with $1,589 in 1961 measured in 1991 dollars. A major part of these expenses are accounted for by nursing homes. Expenditures on hospitals have declined since 1961 and for physicians have increased only slightly. Many of the elderly cannot afford medicare's copayments and deductibles (Washington Post, 2/26/91). Medicaid covers 37% of the poor, down from 65% in the past decade and is available only from those physicians willing to accept medicaid assignment (Publc Citizen Health Research Group Health Letter, 2/8/91). This is proving increasingly difficult for physicians since their reimbursement from medicaid is substantially lower than for their services to their other patients (Washington Post, 7/31/90). Moreover, Medicaid excludes the able bodied, childless non pregnant single adults or childless couples regardless of their income (EBRI, 7/90).

Limitations of Health Care Benefits: There are other barriers to health care in the United States. Today, most health care insurance is geared to acute illness and focusses, therefore, essentially on covering hospital and skilled nursing care costs and associated physician and other health care professionals' fees. There is almost no reimbursement for home care and other outpatient procedures nor for preventive tests and screening. Only 74% of physicians' services, 39% of dental services and 25% of prescription drugs are covered by health care insurance (Owl Observer, Oct-Dec. 1989).

Yet significant numbers of citizens are experiencing chronic health conditions which over the long term do not require hospitalization or acute interventions. Patients are discharged sicker and sooner from hospitals. They require a host of recuperative services most of which are not covered by their health insurance policies. The elderly's need for home care and assistance with normal activities of daily living are similarly not covered. A significant number of the elderly- and especially of elderly women- are poor, live solely on social security or have virtually no disposable income. since women outlive men, are more apt to be in the lower income brackets and experience a greater share of chronic and disabling illnesses and conditions, older women have special health care concerns and requirements.

Many chronic disorders are the product of life style behaviors which have been largely ignored by our acute care illness oriented health care system. With our focus on acute medical care, we have paid little attention to preventive medicine including such things as health care information, wellness programs, nutrition and general fitness. As a result, too many individuals in our country have not had any, or inadequate access to immunizations, diagnostic tests, home care, hearing and vision care and prenatal care.

Escalating Health Care Costs: Finally, the most serious problem underlying our health care system are the runaway costs which our current system generates. United States health care costs (federal and state) increased from $240 billion in 1980 to $817 billion in 1991 (Washington Post, 1/20/91). The share of health care costs to GNP increased from 5.3% in 1960 to 9.1% in 1980 to 14% in 1991 (Ibid).

Between 1965 and 1987, the cost of benefits to employees rose from 2% of wages to 7% (E. Richard Brown, Sept. 1990). In 1990 individual employee contributions averaged $396 a year up 43.5 % from 1989, while family payments rose 29% to $1068 a year (New York Times, 1/29/92). A Henry J. Kaiser Foundation Study estimated that by the end of the decade, an average family's total outlays for health care will jump from its present level of $4,296 to $9 397 (an 16.4% increase) (Washington Post, 12/11/91). For corporations, their health care costs have jumped from 14% of after tax profits to 19.4% (Brown, op. cit. p.6). Business is estimated to be paying an average of $2,239 per family in health care costs (Washington Post, 12/11/91).

A major factor in the rising costs of American health care are the administrative costs incurred in the private health insurance segment of the industry which are passed on to consumers in the premiums which they or their corporate employer must pay.

The American College of Physicians estimates that 20 to 30% of our total health care spending ($110 billion out of $600 billion in 1989) can be attributed to administrative costs. These costs, incurred by physicians, hospitals and nursing homes, are generated by recording, billing, processing, reviewing and auditing claims and include the costs of marketing health insurance policies, maintaining financial reserves and providing for corporate profits. States allow medigap insurers to retain a maximum of 40% and 25% respectively of individual and group policy premiums to cover their marketing and administrative costs, profits and past losses (New York Times, Jan/June 1990).

Hospitals and physicians alike are struggling with an overwhelmingly confusing administrative morass born of the need to comply with the record keeping and reimbursement requirements of these 1500 insurance providers as well as the federal and state medicare and medicaid authorities.

This paperwork for practicing physicians has been estimated as accounting for 40% of their gross income or $31 billion in 1983 (American College of Physicians, 5/1/90). Hospitals, nursing homes and employers also maintain a substantial work force of health care administrators which is said to have grown by 171% between 1970 and 1982. One hospital executive in a small San Francisco hospital estimated that it cost his hospital $7.8 million a year in administrative costs and 140 full time employees to comply with federal health care regulations (Wall Street Journal, 6/26/90). Moreover, hospitals and physicians struggle to cope with the uncertainty of which of their expenditures will be covered or rejected.

Economic and Social Impacts of Accelerating Health Care Costs: These escalating health care costs are giving rise to a series of cost containment steps taken by both business and insurance companies which are further adding to both the costs of health care and a declining coverage for individuals. These private sector efforts to constrain their health care expenditures have exacerbated current inadequacies of our health care system. In many cases, deductibles ar now being assessed both against individual family members and on a per service basis. Annual life time benefit maximums are being added.

Big businesses have instituted managed care programs to control their health care costs which have resulted in substantial inroads on consumer's free choice of physicians. Ten years ago, 90% of US workers could go to any physician they wanted and undergo whatever procedures were deemed necessary. Today only 60% of workers have these choices and this percent is estimated will decline to 15% by the year 2000 (Ladies Home Journal, March, 1991). Large businesses who can afford to do so are becoming self insurers, thus defeating state risk pools for the uninsured since self insurers cannot be forced to join these pools (GAO, Feb. 1989).

Motivated by the competitive market, insurance companies are competing for better risks, offering them lower rates, based on actual claims experience rather than community based averages. Emphasis by insurance company payers on competition as a means of reducing costs have caused them to shift from their community based risk assessment policies into more individualized risk assessment policies. Competition among insurance companies today is for the most desirable risks which means for the healthiest individuals. This has resulted in substantial cut backs in eligibility, substantial premium increases for many companies and individuals and in many cases denials of insurance to whole companies as well as individuals either outright or through the increase of premium rates. Consequently, private health insurance plans available to various companies differ widely in the comprehensiveness of their benefits, premium costs and coverage limits (Griss, World Institute on Disability, 12/08/89). Small businesses with smaller numbers of employees have steadily confronted premiums well above average, far above what they can afford and substantially higher than those paid by large business who can more easily spread their risks over a larger employees populations(GAO, op.cit. p.22).

Finally, the variety of coverage among different employment based health care plans and skyrocketing health care costs are affecting both the productivity of workers as well as their mobility and skewing work forces increasingly towards part time and temporary workers as a means of cutting industry's health care bills (GAO, May, 1990).

Quality Care Impacts of Inadequate Health

Care Coverage: The most serious consequences of the lack of adequate health care coverage in our current health care system are its definable and visible adverse effects on accessibility to quality health care (CRS,6/88; GAO, 2/89; Bob Gris, 12/8/89). These adverse impacts of our health care inadequacies fall disproportionately on special groups, especially the low income families and women. In 1986, the poor had 217% fewer physician visits than did the non poor of the same health status (Health Affairs, Spring 1987). Five million women between the ages of 40 and 65 have no health care coverage. survey research consistently documents that people without insurance use much less health care than those with comparable health care needs who have insurance. Hospitals report that they are providing increasing volumes of uncompensated care. Yet one million patients are turned away from hospitals each year because of lack of insurance or other means of payment (New England Journal of Medicine, Jan 12, 1989). A recent study published in the Journal of the American Medicine Association shows that the uninsured have greater difficulty in seeing a doctor or being admitted to a hospital. It also shows that the insurance status of patients makes a profound difference in how well they are treated by doctors after they have been admitted to the hospital (Washington Post, 01/10/91).

The Physicians For A National Health Program have stated that in their judgment, the co-payments and deductibles endanger the health of the poor people, decrease use of vital in-patient's medical services, discourage preventive care and are unwieldy and expensive to administer (New England Journal of Medicine, 01/12/89).

II. Comparison of United States Health Care with Other Industrial Nations

The United States pays a high price for its mixed private public two tier health care system as respects both the costs and the quality of its health care system. The United States and the Union of South Africa are the only industrial nations of the world that have no universal health care system. Yet United States health care costs are the highest in the world.

Comparing the United States with Canada, for example, its nearest neighbor, The United States spent 12% of GNP on health care as compared with 8.6% for Canada (6.8 and 6.1% respectively for Japan and Germany). In 1970, the year before Canada adopted its universal single payer health care system, the United States and Canada spent roughly 7.4% of GNP on their health care. In 1989, United States health care expenditures had grown by 4.5% to 11.6% of GNP compared to Canada's expenses of 8.9%, a growth rate of only 3.7%. One author argues that this difference in growth rate is actually due to the faster growth of Canadian GNP as a whole rather than to its slower health expenditure growth rate. Hoover, that author bases his figures a 20 year comparison period (1967-1987), which includes three years before the Canadian system became operational. Neuschler, "Is Canadian Style Government Health Insurance the answer for the United States health care cost and access woes?" (GAO, 06/91). In the Canadian per capital health care costs are 25% less than the United States and its physicians fees have decreased since 1971 by 18% while those in the United States increased during this period by 22% GAO, op. cit., p.41).

The GAO estimates that the administrative costs paid by the commercial insurance industry in the United States expended on managers, marketeers, lawyers and other administrators total 33.5% ($130 billion) of its total health care costs compared with 3% in Canada. It is interesting that United States' medicare program reflected a similar 3% overhead figure (Ibid., p.7)

The United States trains and employs a higher ratio of specialists to primary care physicians than any other country and uses more tests, performs more surgical procedures and generally treats patients more intensively than other countries (Wall Street Journal, 4/17/90).

Yet, the health care outcomes for Americans are not as impressive as in other countries nor are the satisfaction levels of its citizens as high as in Canada for example. The United States ranks 24th among all industrial nations in keeping children alive during the first year of life. Only South Africa has a worst record. In addition, the United States ranks 11th in maternal mortality. Deaths in the United States form heart disease stand at 434 per thousand in 1985 while Canada's rate was 348 (Washington Post, 12/18/89). The United States has the lowest life expectancy among six of the most highly industrialized nations in the world, two and a half to three times shorter than the life expectancy tables for Canada, Japan and Sweden. The United States ranks 8th in life expectancy, lower than Cuba. Finally, while Canada averages 85% immunization for dyptheria, polio and measles, the Untied States only averages 70% (Harvard Community Health Plan, 1990). Breaking these immunization figures down, the United States ranks 21st in immunization against measles and 100th in immunization against polio (Oregon Health, 2/27/91)).

Finally, despite the greater expenditures which the United States devotes to health care, its citizens are less satisfied with their health care system than citizens in the top ten industrialized countries. In a 1989 Lou Harris Poll, 89% of Americans were displeased with their health care system, saying that it needed "fundamental change or complete rebuilding" (Health Affairs, Summer, 1990).

III. Proposed Reforms to United States Health Care System

Health care in the United States has been variously viewed as a public good, a reward for certain conditions and a private right. Thus we have a public health system which rests on the recognition that the prevention of epidemics through the inspection of food, sewage and water, and more recently, government funding of children's immunizations and AIDs research are matters of public concern and therefore a proper subject of government attention and action. However, for the delivery of health care services to the bulk of our citizens, our approach has been much more pragmatic and market oriented.

Our current employment based health care insurance system has been influenced by the happenstance of Baylor University's need back in 1905 to staunch its deficits from its non paying patients which led it to launch an experimental health insurance program for Texas school teachers as a way to reimburse their health care costs. It was further solidified by the ad hoc decision of Congress to make payments for health insurance premiums deductible for corporations but not for individuals and by the need of American labor for a collective bargaining agenda. Thus was our system of work place health insurance born, supplemented by the charity of public hospitals and government reimbursement for special groups such as veterans, the elderly, the disabled and certain groups of the poor deemed worthy of some health care protection.

There are two major legislative approaches being taken to health care reform by Congress: employer mandated "pay or play' bills which would maintain and improve the current public private multi tiered system and publicly funded and administered single payer bills which would replace the current network of 1500 insurance companies with a single government agency that would pay for all services but would maintain the current private delivery of health care services.

There are two principal employer mandated bills, one introduced by Representative Dan Rostenkowski in the House (HR 3205) and the other by majority leader Robert Mitchell in the Senate (S1252). Both these bills provide for universal health care coverage by mandating employers to offer health care benefits to their employees or to pay into a Public Health Fund created to provide health care to all those United States residents who are not covered by the private insurance system. These bills also specify the minimum health care benefits to be available to both employment based enrollees and to public fund enrollees and place limitations of $2500/3000 on the contributions which individuals and families can be required to pay. However, employment based plan enrollees may receive additional benefits. Moreover, premiums paid by the two groups are differently calculated. Thus private employer plan premiums will continue to reflect current insurance company risk assessment practices based on the actual risk experience of the plan's enrollees as well as the administrative costs and profit needs of insurers and business. Premiums under the public fund, on the other hand, will be based on community risk assessments. The bills make it easier for small business to acquire insurance and make some changes to the insurance system so that it will better serve small business and limit its ability to refuse coverage to individuals.

In order to better control costs, these bills empower the Secretary of Health and Human Services to establish the nation's annual health care expenditures and to establish provider payment rates for both hospitals, nursing homes and other facilities and for physicians and other health care professionals. A newly established federal Health Care Cost Containment Commission will determine the allocations of these overall expenditures to the various classes of providers as well as the allocations to be made for capital expenditures by hospital and other health care facilities and equipment. These allocations and payment rates are established for both the private and public fund providers. However, states are authorized to vary these rates for the medicare and public programs subject to the approval of the Secretary.

The principal arguments in favor of pay or play bills are that they extend coverage to all US residents, provide assistance to small business to acquire insurance, limit the ability of insurance companies to deny coverage for pre existing conditions and give the Secretary of Health and Human Services power to limit overall health care expenditures and provider rates. Their proponents claim that they are enactable today and constitute an important step towards a more comprehensive health care system. Their principal down sides are that they perpetuate the current multi tiered health care system with all of its attendant administrative costs, paperwork and red tape for both physicians and consumers and place no restraints on the premiums which insurance companies can charge for their health care policies.

The most comprehensive of the single payer health care reform bills (HR 1300) provides for a comprehensive universal health care system which is publicly funded and administered by the federal government (and in Senator Kerry's bill also by the states) and is available to all consumers in their own right simply by virtue of their residency in the United States. Like the employer mandated "pay or play" bills, these single payer bills stipulate the basic minimum health care benefit package to be provided to all United States residents although the single payer bills provide for much more comprehensive health care coverage including home care and long term care (It should be noted that in the Russo single payer bill, the health care benefit package is substantially more generous than either of the employer mandate bills and includes home and long term care). Similarly, they also provide for the Secretary of Health and Human Services to establish the level and application of the annual health care expenditures for the nation and for each state as well as the amount and source of the revenues to be collected. The Secretary is also empowered to establish the operating and capital budgets for the national government and for the states based on states' review and comments. Finally, payments to hospitals and other facilities are to be made on the basis of annual operating budgets consistent with the national and state health budgets and approved by the Secretary. Payment rates for physician and other health care providers are also established by the Secretary.

These single payer health care bills differ from the employment mandated bills in several respects. They have eliminated the multi tiered health care systems and the enormous administrative costs which attach to the need to assess eligibility, compensate insurance companies' marketing costs and profits and comply with the diverse reimbursement and payment requirements of each of the 1500 insurers and of medicare and medicaid. Every individual has basic health care coverage based on their own status as a resident of this country. Health care providers have only one source of reimbursement to look to and individuals have identical health care policies and coverage. Their opponents criticize them primarily because of the fundamental change in our health care system which they encompass and for their alleged potential for government instituted health care rationing which it is feared will be more arbitrary than the current rationing of health care by private insurers and business and by the inability of individuals to afford health care.

Other health care proposals have been offered or are being developed.

President Bush has recently announced the administration's health care reform proposal which seeks to achieve universality through a system of health care tax credits without essentially changing the current employer based insurance system. This is far less comprehensive than any of the current pay or play proposals but like them reflects again the notion of allocating health care resources on the basis of market place principles of competition and so called consumer choice (New York Times, 1/5/92).

States have been experimenting with various ways to reduce their costs focussing primarily on reducing their medicaid expenditures. The most radical of these reforms is Oregon's health care rationing proposal. Under this proposal medicaid would be expanded to cover all Oregon citizens below the poverty line but on a sharply curtailed and limited basis. Oregon developed a list of some 700 medical procedures from which it identified some 587 procedures which will be available to medicaid recipients. The selection of these 587 procedures was based on an assessment of their cost relative to their effectiveness, their contribution, if any, to a patient's quality of life and to the well being of society. Such things as viral pneumonia, viral hepatitis, chronic bronchitis, certain types of asthma and certain back spasms were among the excluded procedures. In addition, these medicaid recipients will be required to enroll in some for of managed care organization in order to further reduce costs (New York Times, 2/2/592).

The critical question confronting the nation will be to choose between the type of health care reform it desires. In making that choice, we have at least two models to look to- the current United States experience with its mixed public and private multi payer employment based systems and Canada's single payer health care system which has been in operation since 1971.

In the United States, the results of our current system of allocating our health care resources through the relatively autonomous decisions of individual insurance companies, employers and health care providers has been a health care system whose costs are the highest among all the industrial nations in the world. It is a system that has favored the generation of specialists over generalists and family physicians, that has provided a higher range of high tech and quality care in urban and more densely populated centers than in smaller cities and towns and that has excluded large segments of our population from care. It is a system that has plunged the bulk of the insured population into fear and insecurity about whether they will have the necessary health care coverage when they need it and whether they will be able to afford the cost of health care once they have to use it.

Given our market place approach to health care, these results are not surprising. While some employers and insurance companies negotiate lower fees from physicians and other health care providers, there is no single central authority with power to negotiate overall fees and charges with all health care providers. The results are substantial cost shifting among health care providers to make up for lower fees in one area by charging higher fees in another or refusing to serve lower paying patients or to treat higher risk more costly patients.

Competition among insurance companies for the consumer's health care dollar has not been reflected in competition in premium rates but in competition for the best possible risks. Individual risk assessment policies based on actual claims experience of the particular group have replaced the more traditional community based risks and has resulted in virtually foreclosing small businesses from obtaining affordable policies for their employees, has barred entire industries from health insurance and excluded many individuals from obtaining insurance because of pre-existing conditions or other high risk health conditions.

Efforts at cost containment have focussed primarily on the patients, reducing their "excess" health care usage through the imposition of user fees (co-payments and deductibles) and restrictions on hospital stays, requiring the use of managed care systems which have limited consumer choice of physicians and cutting back on dependents and retirees coverage as well as on overall coverage.

By contrast, the single payer system as it has functioned in Canada has substantially reduced Canada's health care costs below that of the United States and has also produced much higher satisfaction levels among Canadian citizens. The Canadian system is a mixed federal and provincial government system with the federal government laying down the basic requirements which must govern the health plans to be offered by the provinces. These plans must provide all medically necessary health care to all Canadian residents. They must be portable among the provinces and operated on a non profit basis and managed by public agencies accountable to the provincial governments. Thus each province is a separate insurer in Canada and has the discretion to cover other services such as prescription drugs for the elderly, dental care for children. The provinces receive capitation grants from the federal government amounting to about 38% of their total costs, a 12 % decline from the original federal contribution. They are free to finance their health care from any source although user fees may not be imposed. Most of the provinces rely solely on general tax revenues. Four provinces impose small premium charges.

In Canada, the provincial governments make all the critical decisions about how much money will be spent annually on health costs, whether to insure services beyond those mandated by the federal government and how each will finance their health care plans. Canadian hospitals negotiate their annual global budgets with their provincial governments. Hospitals have no billing responsibilities which substantially cuts down their administrative expanses. Their capital budgets also require special Provincial government approval.

Physicians and health care professionals negotiate the fees they can charge with their provincial governments which also control the number of new medical students and interns and the ratio of specialists to generalists. Physicians submit their bills monthly to the provincial government which again substantially reduces the amount of paper work and administration which they have to go through in order to get reimbursed for their services. They are not permitted to engage in balanced billing. Insurance companies may not offer policies covering the mandated government health care package but may offer coverage on other health care services not included in the mandated coverage.

There are some downsides to the Canadian health care system. Canadian patients do not receive the same intensive high tech medicine as do American citizens. It is generally agreed that the United States has a more rapid adoption of high technology health care equipment than Canada. For example, in Canada, there are only three hospitals per three million persons equipped to perform heart surgery. The Canadian Health Ministry, in consultation with cardia surgeons, deliberately limited heart surgery wards in order to concentrate procedures and experience at a few centers. Some hospitals may be less comfortable for patients, with hand cranked hospital beds and may use treatments causing more discomfort for patients. Physicians lacking CAT scans must perform their examinations manually. There are substantially fewer cardiac catherization labs, lithtriplers (for crushing kidney stones) and MRI scanners per patient in Canada that in the United States.

It is also reported that Canadian physicians employ more conservative treatment protocols. For example, United States physicians tend to advise cholesterol testing for anyone over 20 and treat patients with cholesterol levels in excess of 200. Canadian physicians, on the other hand, test only those persons with a risk of heart disease and do not pursue treatment with levels under 256. They claim that medical studies support these more conservative protocols. It is not clear whether these practice differences have resulted from Canada's single payer system or simply reflect traditional medical practice differences between the two countries.

Finally, there are waiting lists for non emergency access to hospital for certain types of procedures. Canadian patients must wait up to three months for cataract surgery, three to six months for coronary bypass and five months for hip replacements. In addition, Canadians may have to travel some distances for certain procedures. While these travel expenses are reimbursed for patients, they are not for families (Washington Post, 4/30/91; Wall Street Journal, 12.32.91; Neuschler).

However, for all of these real and alleged drawbacks, both Canadians and the Canadian health care establishment are wholly supportive of their system (Conklin, David, 1991). Every Canadian is insured from birth or upon entry into the country; no Canadian is denied coverage for any health or financial reason; the benefits provided Canadians are more comprehensive than those typically provided in the United States and the cost of health care is lower per capita in Canada than in the United States.

IV. Need for Consumer Participation in Health Care Debate

While most policy makers agree there is a need for health care reform in the United States, there is no consensus on how to change the system. A Wall Street Journal NBC poll found that 69% of voters support universal health care even if it takes a tax increase to pay for it. Non profit, professional, religious, consumer and public interest groups and unions are unanimous that the United States must adopt a universal health care system. They are divided, however, on whether this legislation should be single payer or pay or play or some other system. Many are still working on which universal health care plan they will support. The AFL CIO decided not to take a position and to leave their members free to take their own positions.

A strong public interest coalition has formed to push for single payer legislation. CFA, Consumers Union and Public Citizen as well as seniors' organizations such as the National Council of Senior Citizens and the Older Women's League, plus the National Association of Social Workers and the United Church of Christ together with AFSCME and other unions belong to this coalition (The contact for information about this coalition is Citizens Action, 1300 Conn Av. NW., Washington, DC, 20036). The National Consumers League is the only traditional consumer organizations which is not a part of this coalition. It is a member of Health Care America which was originally formed to promote Senator Mitchell's pay or play bill. While composed principal of health care oriented associations, Health Care America does include some non health care related members such as the Children's Defense Fund, March of Dimes, National Council of Negro Women, National Hispanic Council on Aging, AAUP and the Episcopal Church. Other coalitions have formed to promote the pay or play bills. These tend to be heavily weighted toward business, insurance and health care related professional groups.

AARP has put forward a draft proposal which it claims is a combination of both single payer and pay or play. AARP's plan would establish an improved and expanded Medicare plan universally available to all persons with monthly premiums and limited deductibles, coinsurance and copayments. However, AARP's plan would expressly authorize the continuation of private insurance employer sponsored plans which offered the same or improved benefits. Thus AARP's plan is essentially a pay or play bill since it envisages a two tiered health care system, one public required to serve all individuals and one private and free to set premiums which in effect exclude individuals with high risk health care potential.
AARP's board of directors has not yet taken final action on this proposed plan.

ACCI has played virtually not role in this critical health care debate. Indeed health care issues do not seem to have caught the research attention of ACCI members to any large extent. Its last two research conferences in 1988 and 1990, contained no discussion of the health care system as a whole or of any issues of access, coverage, costs or insurance risk assessment practices.

The 1988 research conference papers were totally silent on any of these health care issues and in the 1990 research conference only four out of the forty nine papers presented dealt with health care at all. These looked only at issues of health claims on labelling regulations, consumer awareness of medigap insurance and the need for consumer information about HMOs and health care quality (Mayer, Robert, ACCI, 1990).

Over the years, consumer professionals and scholars have been calling on ACCI members to enlarge their traditional economic market place focus to encompass issues of human welfare and social justice.

In the 1988 research conference, Helen Nelson called upon consumer researchers to go beyond the traditional narrow interpretation of the consumer rights around which the research conference was organized (Nelson, Helen, ACCI, 1989). Commenting on the papers presented on the Right to Safety, she pointed out that this right was much broader than product safety to which these researchers had confined themselves. Researchers, she said, need to be dealing with a much larger conception of safety than this conventional one and must ask such questions as "How 'safe' is a consumer who has no access to health care services. How 'safe' is the consumer who has no entitlement to the delivery of medical Services?" (Nelson, Helen, ACCI, 1988). Her voice and perceptive questions about health care constituted the only single reference to health care I could find in the 940 pages of papers presented at this conference.

In the 1990 research conference, both Esther Peterson and Bob Mayer, echoing Helen Nelson's plea, called on the consumer movement to enlarge its concerns beyond what Mrs. Peterson called "the nickel and dime view of our interests". Mrs Peterson urged ACCI members to focus their research on issues "which would move the public into consciousness of the consumer movement as pursuing responsible and involved citizenship". "Isn't it time" she asked, "we come up with an accepted social index that measures health, literacy, shelter, items of well being in place of economic indices that do not measure where we are in human terms. While society's major institutions are still fixed on defining and measuring value in economic terms, we witness an enlargement of how ordinary people define their consumer interest, from the self interest of the best buy to the wider interest in a fair, safe and healthy world. (Peterson, Esther, ACCI, 1991)" Bob Mayer in his Overview stressed the same theme. He pointed out that enhancing consumer choice is not simply an economic market enhancing phenomenon but is compatible with, and instrumental to, achieving widely shared social goals pertaining to justice" (Mayer, Robert). Both Scott Maynes and Ed Metzen in their future research recommendations urged ACCI members to broaden their concepts of values and to range beyond what can be statistically demonstrated and involve themselves in qualitative research questions (Maynes, E. Scott).

These voices reflect a phenomenon in the consumer movement which has been of concern to me for a long time. Back in the 1970s, Michael Pertshuk was still viewing the consumer movement in protectionist terms as a fight to protect consumers from corporate abuses in the market place while other consumers were organizing themselves outside of the traditional consumer movement to deal with issues of the environment, social security, disability, civil rights, women's issues and the issues of older persons. These groups sensed that the problems they were concerned with did not fit so easily into the traditional consumer movement's "win-lose", " we-they", "white and black hat" syndrome framework. They recognized that it was not so easy to evoke public outrage when the target was not so much corporate misdeeds as the need to balance and weigh conflicting interests and demands. (This was a point of view I expressed back in 1982 to ACCI (ACCI, 1982)). While the traditional consumer movement eventually made common cause with many of these groups and frequently work with them in coalitions, consumer research has by and large not made the same shift.

As the debate on health care reform develops, it is time for ACCI to take a much needed leadership in analyzing and illuminating these issues so that consumer and public interest organizations supporting universal health care can be assured that the program they support will in fact provide consumers with cost effective and realistic access to comprehensive quality health services without regard to their ability to pay.

There are important questions which ACCI researchers need to address.

Canadian Health Care System Vulnerabilities: While the Canadian health care system has been cited by many as a model for the United States, questions have been raised about the efficacy of the Canadian system and its applicability to the United States. Its financial stability is challenged by some as are the impacts on the quality of health care of its efforts to impose cost constraints on hospitals and other facilities. How do waiting periods for non emergency surgery affect consumers and to what extent is Canada's more cautions acceptance of high technology hurting the quality of care available to Canadians. This is an enormously fertile field for ACCI researchers and their contribution of the debate can be substantial.

Centralization and Decentralization of US Health Care System: In the United States, one of the major debates that will arise with either of the reform systems now being discussed concerns the extent to which the United States health care system should be decentralized. We have had experiences in this country with both centralized and decentralized national programs. Social Security and medicare, for example, have been nationally administered while unemployment compensation and medicaid have been largely relegated to the states. These are just a few examples of our mixed federal state system. Plenty of studies have been made of federal state programs in terms of their relative efficiency, costs, etc. I believe, however, that we need research which focusses on how these various systems have impacted consumer welfare (as respects such values as consumer control, choice, confidence, quality of services etc.) and whether we can learn anything from our own history that will help us determine how we want to administer our national health care system.

Efficacy of Managed Care Systems: Cost containment is a major goal of health care reform. HMOs and PPOs are regarded by some as important cost containment mechanisms in the United States and are now being considered by Canada. The advantages and disadvantages of these managed care programs need to be analyzed within the context of their impact on consumer choice, quality of care and access as much as on their costs. It is consumer researchers who have the insights and sensitivities to frame the questions which need to be answered in appraising whether HMOs have hurt or benefitted consumers access to quality health care.

Scope of Health Care Benefits: Our current health care system has been skewed in favor of acute illness rather than preventive care It has also poorly served the health care problems of women, older persons, and ethnic and racial minorities. Thus a critical feature of any health care reform plan is the scope of its benefit coverage. The disparate incidence of illnesses among different population groups in this country has not been reflected in health care research and must not be ignored in the drafting of health care benefits. The definition of long term care, including home care and personal services, is another question of critical importance to the disabled, the chronically ill and to the elderly and must be resolved on the basis of hard facts concerning incidence, cost of alternative treatment and quality of life for consumers. Finally the coverage of mental health is another important issue which has not received major attention in the consumer literature. Yet the incidence of mental health problems (drug abuse, depression, stress as well as the more common mental health illnesses) is widespread among the youth, among the elderly and probably generally throughout the population. It is essential that consumer researchers, with their special sensitivities towards these consumer groups, examine their special health care needs, explore the health care experience of other industrial nations and define a health care benefit package which in fact corresponds to the principal and most frequent health care needs of all Americans.

Financial Impact on Consumers: Because a single payer health care system will create an essentially new health care system so far as its financing and administration is concerned, a central question to be answered is its financial impact on individuals and families as compared with their current health care situation. This is an analysis that was never made as respective the abortive catastrophic health care legislation which was subsequently repealed because consumers discovered that under the legislation many of them would have to pay more for less coverage than they already had. It is essential that this mistake not be repeated with the current health care reform bills now pending before Congress. I know of no other research group better qualified than ACCI members to design a comparative research study of how families and individuals today who have top insurance coverage, mediocre coverage, medicare and medicaid fare under today's system and compare their situation under a single payer system, looking at such variables as coverage, costs, security and stability of coverage.

I believe that Ed Metzen was right when he proposed that ACCI should devote its annual research conferences to single issues so that it can in fact explore these issues in depth. Nothing could be more timely than for ACCI to devote its next conference to the issues of our health care system Through its call for papers, it can ensure that the research will be relevant to the current debate. Its papers can make an important contribution to that debate. By providing relevant data on the consumers interest in health care, ACCI's researchers can ensure that the interests of consumers and not just of business and the health care industry will be taken into account in framing the ultimate reform legislation.

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Relative Risk Aversion and Optimal Credit Use With Uncertain Income

Yu-Chun Regina Chang, The Ohio State University[1]
Xiaojing Jessie Fan, The Ohio State University[2]
Sherman Hanna, The Ohio State University[3]

Borrowing may be optimal if real income is expected to increase. If income growth is uncertain, optimal credit use is not obvious. A two period model of consumption for determining optimal credit use is presented. The impact of a utility function parameter, relative risk aversion, is analyzed by simulation to obtain utility maximizing levels of credit. The results may be useful for financial counselors and educators, as well as for insight into empirical patterns of credit use.

Introduction

Economic investment theory models developed by Fisher (1930) and Hirshleifer (1970), suggest consumers may increase market opportunities and their utility through judicious selection of debts and assets (Herendeen, 1975). If a consumer is uncertain about future income, a small sustained growth (decrease) in real income or a substantial one-time increase (decline) might lead to borrowing (or saving) to smooth consumption over life cycle. Young consumers, especially students, and other families with temporarily low income might find borrowing rational. Clearly, the use of consumer credit makes it possible for families and individuals to have the immediate consumption of goods and services and thus raise their level of living and satisfaction. However, the dramatic growth of consumer installment debt and the holding and use of credit cards from the past two decades (Eastwood, 1985; Canner 1986), has led financial planners and educators to express alarm regarding whether consumers are becoming debt-ridden and overextended. The purpose of this paper is to describe a model for determining optimal credit use decisions with uncertain future income facing consumers. The vehicle of analysis is the familiar two-period model of consumption. Analysis is confined to credit for current consumption.

The Literature

There has been extensive discussion in the literature of optimal saving (borrowing) and consumption behavior under uncertainty either in the context of infinite time horizon or in two-period or multiperiod intertemporal models (e.g., Leland,1968; Levhari & Srinivasan, 1969; Sandmo, 1970; Mirman, 1971; Dreze & Modigliani, 1972; Hey, 1974; Sibley, 1975; Salyer, 1988). In general, the authors analyze one or two variables at a time, assuming a value for each of the other parameters. For example, in two-period models the effects of income and interest rate uncertainty on borrowing (or saving) decisions are analyzed, given an assumption of a certain lifetime. Infinite horizon or finite horizon models explore effects of the discount factor (lifetime uncertainty) on borrowing (or saving) behavior while assuming absence of income and interest rate uncertainty.

In the discussion of income uncertainty and saving behavior, it is assumed that the consumer's beliefs about the value of future income can be summarized in a subjective probability density function. On the basis of this the consumer maximizes expected utility of consumption. Leland (1968) uses a two-period model of consumption to demonstrate the effect of uncertainty on saving and concludes that with a additive utility function and the assumption of decreasing absolute risk aversion, the precautionary demand for saving is a positive function of uncertainty. Sandmo (1970) discusses the effects of increased riskiness of future income on present consumption in a two-period model and proves that increased uncertainty about future income decreases consumption (increases saving). Sibley (1975) extends a two-period result of the effects on optimal savings of increased riskiness in the future income due to Leland (1968) to the multiperiods case. He suggests that increased wage uncertainty raises or lowers saving according to whether the third derivative of the utility function is positive or negative. Since the plausible requirement that the consumer's utility function display decreasing absolute risk aversion implies a positive third derivative, this establishes a presumption that optimal saving increases with wage uncertainty (Sibley, 1975). For the case of a constant (but negative) elasticity utility function, Levhari and Srinivasan (1969) shows that optimal savings can increase with increasing uncertainty. However, those literature mostly emphasize on the effects of subjective probability density function as a projection of uncertain future income on saving (or borrowing) behavior. No study has been done incorporating possible factors such as level of risk aversion, interest rate, income, and income growth rate into a model to demonstrate effects of these uncertainties on optimal borrowing behavior in terms of specific behavior.

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[1] Ph.D. student, Family Resource Management Department

[2] Ph.D. student, Family Resource Management Department

[3] Professor and Director, Family Resource Management Expert Systems Laboratory.

The present study includes factors which influences optimal borrowing decisions. Kinsey and Lane (1978) point out when consumption is accompanied by the use of consumer credit, utility maximization may be viewed in the global sense, thus a life cycle approach to the allocation of income, consumption, and saving (borrowing) is appropriate. Additionally, by appropriate interpretation, two-period models can describe completely the individual's resource allocation problem during any one period of his lifetime, as long as interest is confined to consumption in that period and to his total consumption in all future periods (Hey, 1974). With additional assumptions on certain risk properties of utility functions and extensive discussion about the value of utility function parameter both under certainty and uncertainty, a two-period model with uncertainty for determining optimal credit use facing consumers is presented and illustrated with numerical analysis. The focus of this paper is on the relationship between optimal credit use and relative risk aversion[1]. Implications for a life cycle model are then discussed.

Factors affecting optimal credit use include the expected growth rate of real income, the variance of future income, the consumer's utility function (e.g., the parameter of risk aversion), the real interest rate and the consumer's personal discount rate.

A Two-Period Model Of Consumption

To begin, consider a simple consumption and saving model containing two periods: current year and next year (Bryant, 1990, p. 87). Assume that the household will not exist "the year after the next year", and that it leaves no inheritances or unpaid loans when it departs the scene. Assume, moreover, that the household is not certain what its next year income will be, but knows that next year income will increase at growth rate "g" with probability "p", or remain the same as current year income with probability "1-p". Thus the intertemporal household model contains three parts: the household's intertemporal budget constraint, the household's preferences, and the behavioral hypothesis that it makes decisions as to maximize the total expected utility (T) for the two periods. Because the household is uncertain about the next year income, he/she will make his/her borrowing (or saving) decision in conjunction with his/her known first period income. The second period consumption will, of course, be a random variable, dependent on the actual value of second period income which is assumed to be affected by income growth rate (or decrease rate) and the probability of that income growth occurs, and also dependent on the interest rate of borrowing (or saving). C_2 and C_{2a} represent consumption in these states. Finally, consumers are assumed to repay the loan in full in second period. Mathematically, the problem can be formulated as:

$$T = U(C_1) + \frac{PU(C_2) + (1-P)U(C_{2a})}{(1+\varrho)} \tag{1}$$

The constraints are:

$$\begin{aligned} C_1 &= I - S \\ C_2 &= (1+g)*I + (1+r)*S \end{aligned} \tag{2}$$

$C_{2a} = I + (1+r)*S$ (4)

Variables:

T = Total two period utility
I = Year 1 income
Year 2 income = (1+g)*I (if income increases in that year),
otherwise, Year 2 income = Year 1 income
C_1 = Consumption in year 1
S = The amount of savings in year 1 (negative value means borrowing.)
C_2 = Consumption in year 2 if real income in year 2 increases
C_{2a} = Consumption in year 2 if real income in year 2 does not increase
g = Growth rate in real income
r = Real interest rate (Note that r may be higher for $S<0$, i.e., borrowing, than for $S>0$)
P = Probability that real income increases
ϱ = personal discount factor

A consumer may discount utility from future consumption because of the possibility that he/she may not be alive then, or because of other possible changes in capacity to derive utility from consumption. Discounting because of the risk of death should be small for a young adult. For analysis of savings/credit, the approximate effect of a nonzero personal discount rate is to reduce the real interest rate in the optimal solutions shown below, so that instead of an interest of r, the consumer in effect faces an interest rate of approximately $r-\varrho$. For the remainder of this paper, ϱ is assumed to equal zero. If ϱ is positive rather than zero, a consumer would save less or borrow more for any given set of values of other parameters.

The intertemporal budget constraint with uncertainty is not so simple as that for the certainty case. It is nonlinear and represented by the above three constraint equations (2), (3), and (4).

Household preference is represented by its utility function $U(C_i)$. The literature show that most studies of intertemporal consumption have used a constant elasticity utility function (Hurd, 1989) which is time separable and additive:

$U = C^{1-x} / (1-x)$ (5)

When this type of utility function is used for analysis of risk, the parameter x is relative risk aversion. The elasticity of marginal utility with respect to consumption is -x. The elasticity of intertemporal substitution in consumption is equal to 1/x. C is consumption per time period. (The analysis could allow for other scenarios, but the discussion is limited to this scenarios because it is the most plausible scenario for borrowing for current consumption to be rational).

Estimates of Relative Risk Aversion

Grossman and Shiller (1981) have given x an interpretation as "... a measure of the concavity of the utility function or the disutility of consumption fluctuations" (Grossman and Shiller, 1981, p.224). The higher the value of x, the more risk averse is the consumer, and the more rapidly marginal utility decreases as consumption or wealth increases. The analysis of economic behavior under uncertainty uses relative risk aversion extensively. For intertemporal consumption, empirical estimates of x range from just 1 (Skinner, 1985) to 15 (Hall, 1988). Other estimates were between these two values.

There has been no credible estimation of the utility function parameter, x, the relative risk aversion, because:

- many households face liquidity constraints;
- Some authors have not carefully separated the concept of the personal discount factor, ϱ; and
- The datasets used for empirical analyses did not contain appropriate variables.

However, although it is often assumed that a consumer cannot identify his or her utility function explicitly, it may be possible to construct hypothetical examples that allow one to intuitively identify a unique utility function parameter. It is possible to create a scenario to obtain insight into the similar parameter for the intertemporal utility function. To obtain some insight into plausible values of relative risk aversion x, consider the following *hypothetical* situation: You are 20 years old, and know with certainty that you will live to be 100 in good health. Everything about your personal situation will remain the same for the next 80 years. You want to spend all of your wealth by the day of your death. Your non-asset income will be $20,000 per year in real (constant dollar) terms. You can obtain 6% per year after inflation and taxes on investments. Table 1 shows optimal consumption paths for different values of x, assuming $\varrho=0$, $r=.06$.

Based on the hypothetical example, a value of $x=1$ (which corresponds to a natural logarithm utility function) would seem extremely miserly, as you would spend only $4,323 of your $20,000 income at age 20 in order to enjoy $457,382 of consumption the last year of your life. A value of x=6 might be representative of the typical American consumer, as the consumer would spend $16,929 out of his or her $20,000 income at age 20, and could spend $36,817 at age 100. It seems likely that most Americans would have a value of x between 4 and 8.

Kimball's (1988) hypothetical example for relative risk aversion seems to lead many people to conclude that they have a value of relative risk aversion between 4 and 8 (Hanna, 1988). The utility function U(w), and the expected utility EU(w) are specified as follows,

$$U(w)=\frac{W^{(1-x)}}{(1-x)} \tag{6}$$

$$EU(w)=\sum P_i U(w_i) \tag{7}$$

where x = relative risk aversion level
w = total wealth

A modified version of Kimball's (1988) example developed by Hanna (1988), could explain the concept of relative risk aversion in the context used.

Assume that you have one year to live, and may choose an investment to provide you with your consumption for the next year. Once you choose, it will be impossible for you to obtain income from any other source. You have no assets of any kind. You may choose one of two plans: A or B. Plan A provides you with consumption of $50,000 for the year, while plan B involves a gamble. If you choose plan B, the government in effect flips a coin, and there is a fifty percent chance of having consumption of $100,000, and a fifty percent chance of some lower consumption I. At what level of I would you be indifferent between Plan B and Plan A.

Table 2 shows how your answer corresponds to your level of relative risk aversion.

Economists have estimated average values of relative risk aversion ranging from about one to over 10. In the context of the expected utility model, relative risk aversion relates to the extra utility of increased consumption if the gamble pays off compared to the lost utility because of decreased utility if you lose the gamble. For instance, if you have a relative risk aversion level of 4, you value the gain of utility from increasing your consumption from $50,000 to $100,000 the same as the loss of utility from decreasing your consumption from $50,000 to $40,548 (Hanna, 1988, p. 65). The assumption of constant relative risk aversion implies that the examples in Tables 1 and 2 are independent of the absolute levels of consumption used. For instance, multiplying or dividing the consumption levels by two would give the same results.

By substituting the constant elasticity utility function in equation (7) into equation (6), we can obtain the optimal amount of saving in terms of year 1 income, interest rate, income growth rate, and probability of that income increases. To give some intuitive insight into optimal credit first, optimal credit with perfect certainty will be examined.

Optimal Credit with Perfect Certainty

If a consumer is certain that real income with increase with a growth rate g, and the consumer faces a real interest rate r, Equation 8 gives the optimal savings as a proportion of year 1 income. The consumer's relative risk aversion is x. For particular values of r and g, the greater the relative risk aversion, the more the consumer should borrow. This seemingly paradoxical result is due to the fact that the two period model with certainty involves no risk, but only intertemporal allocation.

If the consumer faces a higher interest rate for borrowing than for saving, there may be some growth rates for which neither borrowing nor saving is optimal. If the ratio is negative, borrowing is optimal.

$$\frac{S}{I}=\frac{(1+r)^{(\frac{1}{x})}-(1+g)}{(1+r)^{(\frac{1}{x})}+(1+r)} \tag{8}$$

The natural log utility function (U = Ln[C]) has been used frequently, and corresponds to a relative risk aversion level of 1.0. Based on the example from Table 1, the log utility function implies extremely miserly behavior. It is simple to

Table 1
Optimal Intertemporal Consumption by Relative Risk Aversion, Hypothetical Example.

Age	x=1	x=2	x=3	x=4	x=5	x=6	x=20
20	4,323	11,104	13,942	15,421	16,323	16,929	19,073
30	7,742	14,859	16,931	17,840	18,341	18,656	19,637
40	13,865	19,885	20,560	20,637	20,608	20,558	20,217
50	24,831	26,611	24,968	23,874	23,155	22,655	20,815
60	44,468	35,611	30,320	27,618	26,017	24,966	21,431
70	78,635	47,656	36,820	31,948	29,233	27,512	22,064
80	141,614	63,774	44,713	36,959	32,846	30,318	22,716
90	255,400	85,344	54,299	42,754	36,905	33,410	23,388
100	457,382	114,210	65,939	49,459	41,467	36,817	24,079

analyze. Substituting the value of x = 1 in Equation 8, Equation 9 is obtained.

Table 2
Intuitive Example of Relative Risk Aversion

Relative Risk Aversion	Lowest Value of I
0	0
1	25,000
2	33,333
3	37,796
4	40,548
6	43,665
10	46,299
20	48,209

$$\frac{S}{I}=\frac{r-g}{2(1+r)} \qquad (9)$$

Note that if g is greater than r, saving is negative, so that some borrowing is optimal. For a given value of r, as g increases, the optimal amount to borrow will increase. For instance, if g=.2 and r=.1 then S/I = -4.5%. If this year's income is $10,000, the optimal amount to borrow is $450.

For other values of x, Equation 8 is somewhat complicated. However, an intuitive sense of the patterns can be obtained by using the approximation $(1+r)^{(1/x)} = 1+r/x$, resulting in Equation 10.

$$\frac{S}{I}=\frac{\frac{r}{x}-g}{2+r+\frac{r}{x}} \qquad (10)$$

With a "reasonable" value for x of 6 (based on the two hypothetical examples), if the real interest rate is less than six times the real growth rate, some borrowing is optimal. For a real interest rate of 14.1% (e.g., credit card with 5% inflation), a real growth rate of 3% would imply some credit use.

For a particular value of g, as r increases, S/I increases. If S/I is negative, as r increases, the optimal amount to borrow decreases. If g = .2, x = 6 and r=.1, then S/I = -8.7%.For g=.2, x=6 and r=.2, S/I = -7.5%, compared to -8.7% with r=.1. For given values of I, g and r, as x increases, the optimal loan increases.

Optimal Credit with Uncertainty
There is no simple, closed analytical solution for optimal savings or credit with uncertainty. Therefore, simulations were used to find optimal savings/credit

Simulations of Optimal Credit Use

Equations 1 through 4 were used with simulations to find the value of S that maximized expected lifetime utility for particular values of the parameters. In this section, we shall discuss and illustrate effects of the utility function parameter, x, relative risk aversion, on optimal credit use and relevant saving and consumption behavior. Two graphs are produced to help illustrate effects of these parameters by using a numerical simulation technique. In order to focus on scenarios with borrowing, it was assumed that the consumer faced either constant real income or a real income growth rate g with a probability p.

In the cases of certainty (i.e., probability of income increases equals one), the greater the relative risk aversion, the less the consumer will save, or the more the consumer will borrow. The relative risk aversion is related to how much more utility the consumer will lose due to low consumption in year 1 than he/she will gain from higher consumption in year 2. For any given real income increase, the consumer will borrow more in order to smooth out consumption as much as is justified by the utility function and the real interest rate on loans. When uncertainty is added to the total period utility function (i.e., probability of income increases between zero and one), the borrowing-relative risk aversion relationship observed for certainty does not always hold. The simulations were based on the following assumptions:

- The real interest rate on loans = 14.095% (e.g., nominal rate of 19.8% with 5% inflation.)
- The real interest rate on savings = 1% (e.g., nominal interest rate of 8.4%, subject to 28% tax rate and 5% inflation.)
- Expected utility from all possible borrowing levels (at 14.095%) is compared to expected utility from all possible saving levels (at 1%) and optimal saving/borrowing is that which produces highest expected utility.

Figure 1 shows the relationship between the optimal ratio of amount saved in year 1 to year 1 income and relative risk aversion, assuming that there is a chance that real income will remain the same in year 2, and a chance that real income will increase by 12% in year 2. A 12% real increase in income might be possible with a good promotion in a job or a job change. For p=100% that real income will increase by 12%, higher values of relative risk aversion (x) are associated with *higher* amounts borrowed. For relative risk aversion of 6.0, optimal savings as a percent of year 1 income = -4.5%. For instance, if year 1 income = $20,000 and the consumer is certain that real income will increase by 12%, he/she should borrow $900.

For probabilities less than 100%, there is a U-shaped pattern between optimal savings (borrowing) and relative risk aversion. For instance, for p=70%, for relative risk aversion = 1.0, optimal savings as a percent of year 1 income = zero. For relative risk aversion = 1.3, optimal saving is -0.3% of year 1 income. For a reasonable value of relative risk aversion, for instance, x = 6.0, optimal savings = -2.341% of year 1 income. For instance, if year 1 income = $20,000 and there is a 70% chance that income will increase by 12%, the consumer should borrow $468. The minimum optimal saving (maximum borrowing) is for x = 8.9, with optimal borrowing = $491. For x=20, optimal is $402. For p = 70%, optimal borrowing is approximately constant for values of relative risk aversion between 4 and 20.

For p = 90%, for relative risk aversion = 6.0, optimal savings = -3.712% of year 1 income. If year 1 income = $20,000 and there is a 90% chance that income will increase by 12%, the consumer should borrow $742. The minimum optimal saving (maximum borrowing) is for x = 10.7, with optimal borrowing = $790. For x=20, optimal borrowing is $724.

Figure 2 shows the relationship between the optimal ratio of amount saved in year 1 to year 1 income and relative risk aversion, assuming that there is a chance that real income will remain the same in year 2, and a chance that real income will increase by 50% in year 2. A 50% real increase in income might be possible if a family member returns to the labor market. For p = 100% that real income increases by 50%, optimal borrowing = $3910 for relative risk aversion (x) = 2, $4417 for x=6, and $4595 for x=20. For p = 98%, optimal borrowing increases from $764 to $3946 as x increases from 0.4 to 3.9, then decreases to $3814 for x=6 and $1746 for x=20. For p = 70%, optimal borrowing increases from $119 to $1860 as x increases from 0.5 to 2.3, then decreases to $1412 for x=6 and $498 for x=20.

A consumer expecting a high probability of a substantial increase in real income may rationally borrow a large amount of money for current consumption. The importance of a correct assessment of the probability of an income increase may be seen in Figure 2. For any particular level of relative risk aversion, optimal borrowing is substantially greater for higher probabilities. Note, however, that regret is not assumed to enter the utility function. If a consumer has a relative risk aversion of 6 and a probability of 98% that real income will increase by 50%, then there is a 2% probability that he/she will have the discomfort of repaying the $3814 borrowing out of an unchanged income of $20,000. This will result in a drop in real consumption of 21.8%.

Relative Risk Aversion and Optimal Credit Use
Over the range of values of relative risk aversion shown in Figures 1 and 2, there is a substantial difference in optimal credit use. However, based on the two intuitive examples given above, the plausible range of values for relative risk aversion for most consumers is between 4 and 8. Therefore, there is less of a range of optimal credit use for any particular values of the other parameters. For the example in Figure 1, with real income growth = 12%, optimal credit use increases as relative risk aversion increases from 4 to 8. For the example in Figure 2, with real income growth = 50%, optimal credit use decreases as relative risk aversion decreases, for all of the probabilities shown except 100%. There are not large differences, and recommendations based on the midpoint of the range would not be very different from an "optimal" recommendation, assuming a consumer's true value of relative risk aversion was in the range of 4 to 8.

The Credit Use Computer Program

A computer program has been written based on the model described in this paper. The program is available in DOS and Windows versions. The purpose of the program is to give students insight into factors affecting optimal credit use in a two period model. The program asks the user for estimates of the probability that household real income changes next year, as opposed to remaining constant. The user can change the interest rate on loans and the rate of change in income, as well as the level of income this year. The program calculates optimal savings/dissavings for three levels of relative risk aversion: 4, 6 and 8. The program recommends the highest level of savings (lowest level of credit) of the three values of relative risk aversion. As can be seen in Figure 2, there is not a monotonic relationship between relative risk aversion and the optimal amount of credit, so the method used in the computer program is necessary for a conservative recommendation.

Extensions to a Life Cycle Model

The two period model can be extended to a life cycle model if certainty is assumed. For probabilities greater than 98% that real income will increase, there may not be substantial differences in optimal credit use, if it can be assumed that real income will either increase or remain constant after the first year. For many households, the simplifying assumption that income will either increase or remain constant are very unrealistic. However, if there is a small probability that there will be a substantial drop in real income, a consumer who has taken on credit for current consumption has the option of default or some form of bankruptcy. It is difficult to model the costs of bankruptcy, so the possibility is ignored in this paper.

Summary and Conclusion

A two-period model of consumption is developed to analyze optimal credit use decisions, based on the probability that future real income will increase, for different levels of relative risk aversion. With the assumptions that the utility function is additive in C_1 and C_2, and that there is constant relative risk aversion, effects of parameters on optimal borrowing and saving decisions and the interacting relationships are discussed and demonstrated using numerical simulation technique and graphs. We have shown that the optimal amount of credit use increases with increasing income growth rate and with increasing probability of a real income growth. For many combinations of real growth and probabilities the optimal amount of credit use does not vary by a substantial amount for reasonable values of relative risk aversion (between 4 and 8).

Implications for Empirical Research
Clearly, rational credit use for current consumption depends strongly on the likelihood of an increase in real income. Empirical analysis of credit use should include independent variables related to the probability of a change in real income and the magnitude of possible real income changes. Analysis of consumers who have overused credit, including those who have declared bankruptcy, should take into account the expectations before the credit was obligated. Some research on probabilities of real income changes would be useful.

Implications for Consumer Education

Consumers should be encouraged to realistically evaluate the chances for income increases. If a consumer is "fairly sure" that real household income will increase by 12%, there is a large difference in optimal credit use between a probability of 70% and a probability of 98%. Advice on credit use should depend on individual household characteristics, such as age and occupation, as well as macroeconomic conditions. Young consumers who can realistically expect substantial increases in real income may find credit use for current consumption rational even at high interest rates.

Limitations and Future Research

The simplest possible model of optimal credit use dealing with uncertainty has been developed. Clearly it would be desirable to extend the model to the borrowing and saving decisions over more than two time periods. The more complicated model such as multiperiods or a lifespan analysis of optimal saving and borrowing decisions, however, may require complex computer programming techniques. Further analyses using empirical data may be needed for comparisons between theoretical and empirical results. Advice can then be provided regarding differences between suggested amount of optimal credit use and the consumer's realistic credit practice.

Endnotes

1. Another paper by the authors focuses on the relationship between optimal credit use and the probability of a real increase in income (Fan, Chang and Hanna, 1992, pp. 112-117).

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Consumer Choice and the Sunk Cost Effect: A Debiasing Framework

Pete Nye, Northeastern University[1]

While normative economics argues that sunk costs should not effect current choices, decision-makers often find sunk costs difficult to ignore. Allowing sunk costs to influence choice is a robust judgmental error which is thought to be difficult to debias. A simple experiment demonstrates that the sunk cost error may be less prevalent when a decision-maker who understands the sunk cost concept: 1) is prompted to adopt an analytical choice strategy; or 2) feels a need to justify his choice of others.

I. Introduction

Normative economics argues that sunk costs are irrelevant to current decisions and should be ignored. Consideration of sunk costs in analyzing a current choice is an irrational economic behavior referred to as the sunk cost effect. Only incremental costs and benefits are relevant to current decisions:

> Inherent in the incremental-cost concept is the principle that any cost which is not affected by the decision is an irrelevant cost for purposes of that decision. Costs which are invariant across the alternatives are labeled "sunk costs," as they play no role in determining the optimal course of action (Pappas, 1983, p. 255)

In spite of this normative proscription (hereafter called "the sunk cost principle"), the sunk cost effect is a robust judgmental error observed in a variety of decision contexts - formal and informal, personal and organizational (Thaler, 1980; Laughhunn and Payne, 1984; Arkes and Blumer, 1985).

This paper examines the sunk cost effect in the context of consumer choice. First, I argue that the effect is p artly an error of application, not simply an error of understanding (Kahneman and Tversky, 1982). Even subjects who understand and endorse the sunk cost principle often fail to ignore sunk costs when making choices. Second, this error of application is most likely to occur when one or both of the following conditions apply:

(1) the decision maker is employing an heuristic, non-analytical choice strategy.

(2) the decision maker is motivated by a desire to appear retrospectively rational rather than to be prospectively rational.

Finally, I hypothesize that the sunk cost effect can be substantially reduced if the task environment and task structure encourage an analytical, prospective choice strategy.

The remainder of this paper is organized into four sections. Section I reviews mechanisms by which sunk costs may influence choice and demonstrates that each of these mechanisms requires that the decision maker is either employing an heuristic choice strategy or is driven by a desire to appear retrospectively rational. Section II draws on theory from social psychology to suggest possible techniques for overriding or debiasing the sunk cost effect. Seven hypotheses are proposed. Section III presents a simple experiment which tests two proposed debiasing techniques. Finally, implications for further debiasing efforts and for further research are discussed.

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[1] The experimental design was developed with the assistance of Itamar Simonson, University of California, Berkeley.

II. Theory: How Sunk Costs Influence Choice

Previous research suggests that the sunk cost effect may be more an error of application than an error of understanding. For example, Arkes and Blumer (1985) conducted an experiment with three groups of subjects, differing in their formal training in economics (no training; one course; a major in economics). They conclude that "instruction in economics does not lessen the sunk cost effect." While specific instruction regarding the sunk cost principle may be useful, this paper argues that instruction alone is insufficient to override the sunk cost effect.

> HYPOTHESIS A: The sunk cost effect is partly an error of application. The effect will be prevalent even among subjects who endorse the sunk cost principle.

There are two explanations for this hypothesis. First, the sunk cost principle is a normative rule which is logically compelling, but not intuitive. Decision makers (DM's) who understand the principle will usually apply it when they employ a conscious, analytical choice strategy, but will often fail to apply it when they employ an intuitive, heuristic strategy. In short, the sunk cost principle is a logical precept which will often not be invoked when DM's are behaving intuitively- as is frequently the case with consumer choice. Second, to comply with the sunk cost principle, DM's must not only employ a conscious, analytical choice strategy, they must also be motivated to make a prospectively rational choice. Consumers and other decision makers are often motivated by a desire to justify previous choices rather than to make current choices which are rational (Simonson, 1987 1989; Staw, 1976 1980). In such circumstances, DM's may employ conscious analytical strategies which are "retrospectively rational" rather than "prospectively rational" (Staw, 1980).

If the sunk cost effect is an error of application, the critical question becomes: when and why are DM's who understand the sunk cost principle influenced by sunk costs? This section reviews mechanisms by which sunk costs are thought to influence choice.

Prospect Theory: the Psychophysics of Value

Prospect theory suggests one explanation as to how a sunk cost can influence a current choice. Prospect theory identifies two stages of the choice process: 1) editing or framing options, and 2) evaluation and choice (Kahneman and Tversky, 1979). The theory argues that framing will influence evaluation and choice. I will briefly describe each stage as it applies to the sunk cost problem.

Using the terminology of mental accounting, a sunk cost problem may be framed using either the "minimal account" or the "psychological account." The consumer frames a choice using the "minimal account" when he ignores sunk costs and considers only prospective gains and losses which would result from the decision. Alternatively, the consumer can frame the choice using the "psychological account," in which case sunk costs are incorporated in the analysis, and prospective gains and losses are evaluated with reference to an initial asset position reflecting earlier decisions. Tversky and Kahneman argue that people normally adopt the minimal account to simplify evaluation, but they acknowledge that the sunk cost effect is a frequently observed exception to the rule: "A sunk cost effect arises when a decision is referred to an existing account in which the current balance is negative" (1981, p. 457).

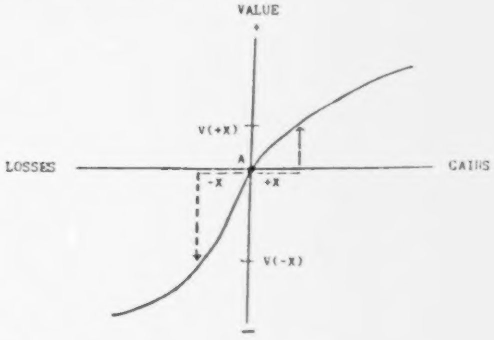
Framing may be a critical determinant of the choice made in the second stage of the decision process. To understand the dynamics by which the decision frame influences choice, it is necessary to understand the value function, a critical construct in prospect theory. The value function specifies the relationship between objective gains and losses (usually measured in dollars) and the psychic value which the decision maker attaches to those gains and losses. Figure I-A depicts a hypothetical value function, with gains and losses measured horizontally and their psychic values measured vertically. The value function is: 1) "defined over gains and losses with respect to some natural reference point"; 2) "concave for gains and convex for losses"; and 3) "steeper for losses than for gains" (Thaler, 1980, 42-43).

The value function explains how consideration of a sunk cost will impact a current choice. Consider the following risky choice which is represented in

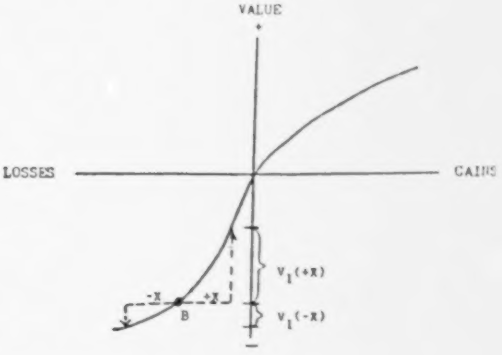
Figure II.

Problem 1 (used automobile)
You want to dispose of your old automobile at a reasonable price. Your local auto dealer has offered you $200 only if you will sell today. Alternatively, you can try to sell the car on your own. You believe that there's a 50 percent chance you could sell it for $400 and a 50 percent chance that it will break down and have to be scrapped at a cost of $50. Only 3 months ago you spent $300 to keep the car on the road. Will you sell now or hold out for a better deal?

Figure I
The Value Function



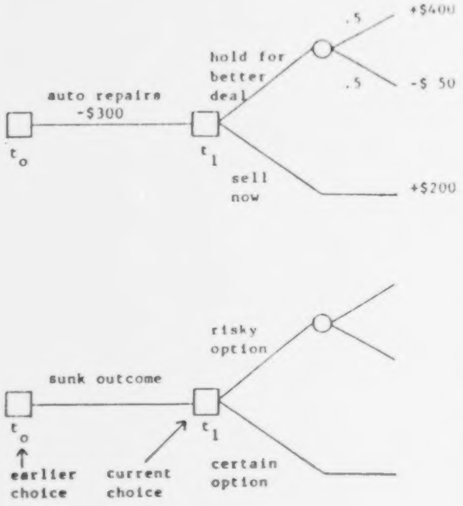
(A) framing with the minimal account



(B) framing with the psychological account

The base gamble is a choice between a certain gain of $200 and a risky option which promises an equal chance of gaining $400 or losing $50. The previous auto repairs are normatively irrelevant since they represent a sunk cost. If the minimal account is adopted, the consumer is likely to choose the certain option (sell now): it is risk-free and offers a higher expected return than the risky alternative. Using the minimal account, the possible outcomes from the risky option will be evaluated relative to a zero reference point (point A in Figure I-A). The value function will accentuate the aversiveness of the loss (-$50) and reduce the attractiveness of the gain (+$400), thus reinforcing the preference for the certain outcome.

Figure II
Asset Disposal Problem



However, if the psychological account is adopted, the risky option will appear relatively more attractive. The possible outcomes will be evaluated relative to a reference point of -$300 (point B in Figure I-B), the existing deficit in the psychological account. In this case, the value function will accentuate the attractiveness of the potential gain and will reduce the aversiveness of the potential loss, thus making the risky option more enticing. An additional loss of $50 on top of an exisitng deficit of $300 is not as aversive as a loss of $50 which is mentally accounted for in isolation. The implication is clear: in a sunk cost problem, adoption of the psychological account will encourage increased risk seeking.

Although prospect theory is concerned with risky decisions, the value function explains how adoption of the psychological account will affect deterministic choices as well. In general, a certain gain will seem more attractive when it is evaluated relative to an existing sunk cost rather than in isolation; and a certain loss will seem less aversive when lumped with an existing sunk cost. Consider an example:

> Problem 2 (tennis club)
> You own an annual membership in the local indoor tennis club. In retrospect, you feel that the annual membership fee of $400 is too steep, and you do not plan to renew at the end of the year. Court fees are $10 per hour. How many time per month will you use the courts?

The $400 membership fee is a sunk cost and is normatively irrelevant to the decision. However, some consumer will be unable to ignore it. The $10 usage fee will seem less aversive when it is evaluated relative to a reference point of -$400 (psychological account) than when it is evaluated relative to a zero reference point (minimal account). Hence, consumers adopting the psychological account will be inclined to use the courts more frequently than those who ignore the sunk cost. This observation led Thaler (1980, p. 49) to identify a common application of the sunk cost effect: "Paying for the right to use a good or service will increase the rate at which the good will be utilized, ceteris paribus."

The preceding explanation of the sunk cost effect implicitly assumes that the DM is using an heuristic, non-analytical decision strategy. In order for a sunk cost to influence choice, two mechanisms must operate. First, at least one option must be framed using the psychological account. Second, the value function must be invoked to evaluate the options. Both of these mechanisms operate largely beyond conscious recognition. DM's tend to adopt decision frames in an heuristic manner and are often unaware of how they have framed a choice. A superficial feature of the problem may cue adoption of a decision frame. Similarly, the value function is a psychophysical mechanism which operates outside the realm of systematic analysis.

Kahneman and Tversky (1982) support this interpretation. They define an intuitive judgment as one which "is reached by an informal and unstructured mode of reasoning, without the use of analytical methods, ... " (1982, 124). They argue that most judgmental errors result from the use of heuristic or intuitive decision strategies. Even sophisticated decision makers will make judgmental errors when employing intuitive strategies, because their expertise cannot be brought to bear on the choice. Thus, a DM is most likely to suffer from the sunk cost effect if he is using an intuitive decision strategy involving little deliberate analysis.

Justification and Retrospective Rationality

The justification literature (Aronson, 1973; Staw, 1980; Cialdini, 1985; Tetlock, 1985) complements prospect theory in explaining the sunk cost effect. While prospect theory focuses on the consequences of considering sunk costs, the justification literature focuses on the motivation for doing so. According to the escalation of commitment research, DM's adopt the psychological account in order to avoid the damage to self-esteem and social image that accompanies acknowledgment of having made a bad decision. Psychologically "writing off" a sunk cost and ignoring it in subsequent decision-making requires the admission that a previous decision to expend resources was a mistake. Such an admission is adversive and can be avoided (or delayed) by continuing efforts to "recover" the sunk cost. Man is a "rationalizing animal" who will make great efforts to justify past decisions (Aronson 1973). Staw (1980) summarizes this explanation of the sunk cost effect:

> Probably the most critical element separating prospective from retrospective rationality is the individual's treatment of sunk costs. ... The individual, in order to appear rational in his decision making, is likely to keep sunk costs as an active part of decision making under retrospective rationality. The desire to recoup sunk costs is probably what underlies much of the behavior that we commonly label as self-justification. ... By throwing good money after bad individuals sometimes attempt to prove that they never really made a mistake after all. (57-58)

While earlier literature on self- justification and dissonance (Aronson, 1968; Festinger, 1957) focuses on internal self-justification, Staw argues that in organizational contexts the desire for external justification may be more important. Simonson (1987a, 1987b) demonstrates that the desire for external justification is a salient motive in consumer choice. Tetlock (1985) argues that the individual DM is strongly motivated to protect both his self-image and his social image.

All of the justification-based explanations of the sunk cost effect require that the DM act in an "irrational" manner in that his choice is driven by retrospective concerns rather than by prospective outcomes. In addition, Staw argues that behavior motivated by justification often has an heuristic character. DM's may "simply accept culturally prescribed actions without undergoing any active decision making" (1980, 49). For example, DM's may almost automatically follow a consistency principle or avoid "wastefulness" without systematically analyzing the choice options.

Summary

Prospect theory and the justification literature offer complementary explanations of the sunk cost effect. Both explanations require that the DM employ choice strategies which are retrospective, heuristic or both. It follows that it may be possible to diminish the sunk cost effect by structuring the decision task and the decision environment to encourage systematic, prospective analysis of choice options. The following section suggests several possible debiasing techniques consistent with this logic.

III. Theory: Debiasing the Sunk Cost Effect

Most judgmental errors are robust and not easily overcome by simple manipulations - such as inducing DM's to work harder. According to Fischhoff (1982, 440), "Effective debiasing usually has involved changing the psychological nature of the task (and subjects' approach to it). "Below, I propose two techniques for debiasing the sunk cost effect. Both attempt to alter the subjects' approach to the choice task by encouraging systematic, prospective analysis.

The Reasoning Prompt

Hagafors and Brehmer (1983) describe a continuum of thinking modes, ranging from intuitive thought to analytical thought. Similarly, Chaiken (1980), in studying persuasion, identifies a continuum between heuristic processing and systematic processing. DM's using an intuitive, heuristic mode apply simple, non-analytical decision rules, exert relatively little cognitive effort, and are often not conscious of the decision strategies they are using. Because any number of peripheral contextual factors may cue the adoption of a choice heuristic, choices made by the intuitive DM are very sensitive to superficial changes in context and are often inconsistent. A DM is consistent if he responds similarly to problems with the same deep structure. The intuitive DM is inconsistent in his choices because he responds to superficial surface features of the problem rather than to the deep structure. In contrast, the analytical DM applies a systematic decision strategy, exerts greater cognitive effort and is usually conscious of his decision strategy. As a result, the analytical DM makes more consistent and more normatively rational choices.

The previous section argued that the sunk cost effect will be most prevalent when DM's adopt an intuitive choice strategy. The reasoning prompt is a manipulation in task structure which is expected to reduce the sunk cost effect by encouraging DM's to move away from intuitive choice strategies towards more systematic strategies. The manipulation is simple: subjects are instructed to briefly list reasons for choosing each alternative before making a final choice. Two effects are hypothesized.

HYPOTHESIS B1: The sunk cost effect will be less prevalent among DM's in the reasoning condition than among DM's in a control condition.

HYPOTHESIS B3: DM's in the reasoning condition will make more consistent choices than DM's in a control condition.

Accountability Prompt

Tetlock (1983, 1985) argues that individual choice behavior cannot be understood independent of its social context; choice strategies are influenced by social motives as well as by cognitive factors. Tetlock has studied the impact of accountability ("the need to justify one's views to others", 1983, 74) on the complexity of the decision maker's thinking. DM's are often very concerned about being able to justify their choices. Although DM's prefer to be "cognitive misers," relying on simple choice heuristics, they will adopt more thoughtful, systematic choice strategies when they expect to be held accountable for their choices. In Tetlock's research, DM's who expected to be held accountable engaged in "preemptive self-criticism:"

> They attempted to anticipate counterarguments and objections that potential critics could raise to their positions. This cognitive reaction could be viewed as an adaptive strategy for maintaining both one's self- esteem and one's social image." (1983, 81)

Due to preemptive self-criticism, DM's who are concerned about justifying their choices should exert more cognitve effort, employ more systematic choice strategies, be more aware of the strategies they are using, and make more consistent choices. Accountable DM's will engage in more complex thinking: they will be more circumspect, considering arguments on both sides of an issue (Tetlock, 1985).

Although Tetlock's work focuses on opinion formation, he speculates that accountability might reduce certain judgmental errors as well. Accordingly, I predict that DM's expecting to be held accountable for their choices will be less susceptible to the sunk cost effect than DM's not held accountable. In the accountability condition, DM's are told that they will be held accountable for the current choice. Specifically, the DM is informed *before making the choice* that he may later be asked to justify his choice to important others. Three effects are hypothesized:

> HYPOTHESIS C1: The sunk cost effect will be less prevalent among DM's in the accountability condition than among DM's in a control condition.
>
> HYPOTHESIS C2: DM's in the accountability condition will exert more cognitive effort (as measured by time devoted to the task) in making a choice than will DM's in a control condition.
>
> HYPOTHESIS C3: DM's in the accountability condition will make more consistent choices than DM's in a control condition.

IV. Exploratory Study: Design

This study tests six hypotheses presented in the previous sections.

Subjects

104 undergraduates from Duke and the University of North Carolina completed questionnaires as an exercise in their marketing classes. One objective of this study is to demonstrate that the sunk cost effect is in large part an error of application, committed even by DM's who understand the sunk cost principle. For this reason, the current analysis focuses only on the 84 respondent's who endorsed the sunk cost principle. Subjects were asked to agree or disagree with a statement of the sunk cost principle using a six point scale (1 = strongly disagree, 6 = strongly agree). Subjects scoring below 3.5 were eliminated from this analysis; the remaining 84 subjects averaged 5.14 on the scale.

Questionnaire

Eight sunk cost problems were embedded in an 18 item questionnaire. Each problem described a recently incurred sunk cost and then asked the subject to choose between two courses of action. Three problems described risky choices while five described deterministic choices (certain outcomes). Representative problems are included in the Appendix. In each problem a strong normative case can be made for choosing one course of action, but a psychologically salient sunk cost might induce DM's to choose the alternative course. Consider, for example, the used automobile problem described in Exhibit II and the Appendix. Selling the auto now is the normatively prescribed action, because it offers less risk (none) and a higher expected payoff than the risky alternative of holding out. On a risk/return basis, "selling now" dominates "holding out." However, subjects who are unable to ignore the $300 sunk in auto repairs may be inclined to hold out.

Experimental Design

A one-way design with three conditions was employed. The manipulations were achieved by varying the instructions attached to the questionnaire.

> CONTROL CONDITION: Your responses are collected solely for statistical purposes and will only be analyzed together with the responses of other participants in this study. Do not put your name on the questionnaire.
>
> REASONING CONDITION: For these problems, your task has two parts. First, briefly list advantages of (or reasons for) selecting each alternative. Second, indicate the choice you would make in that situation. (repeat control instructions)
>
> ACCOUNTABILITY CONDITION: In a few weeks you may be invited to meet with the researchers conducting this study to explain and justify your choices.
>
> Please print your name and social security number on the next page. In addition, in order to ensure that pages do not get lost, please enter your initials in the upper right-hand corner of each page.

In the reasoning condition subjects were provided with a table in which to list reasons for choosing each alternative. This manipulation explicity encouraged subjects to adopt a systematic decision strategy.

Dependent Measures

Each subject chose between the normatively recommended option and the alternative on each of eight questions. The average number of normatively incorrect choices was calculated for each condition. This is an indicator of the strength of the sunk cost effect and was the variable of primary interest. In addition, for each of the eight problems, the proportion of subjects in each condition choosing the normatively inferior alternative is reported.

Subjects in the accountability and reasoning conditions are expected to exert greater cognitive effort and make more consistent choices than control subjects. The amount of time devoted to the questionnaire is used as a proxy for cognitive effort. Since subjects in the reasoning condition do an additional task (listing of arguments) which control subjects do not do, the time variable confounds cognitive effort with task requirements. As a result, it is not possible to demonstrate that more cognitive effort is exerted in the reasoning condition than in the control condition.

Consistency of choice is measured twice: once for all 8 choices and once for just the 3 risky choices, which are more complex. A consistency index takes on a value of 0 when choices are completely inconsistent and a value of 1 when choices are completely consistent.

Error of Application

All of the subjects in this analysis endorsed the sunk cost principle. On a six-point scale, where 6 represents strong endorsement, the average subject scored 5.14. Despite this apparent understanding of the sunk cost principle, in all eight problems a significant proportion of subjects ($p < .001$) chose the normatively inferior option. In fact, in half of the problems more than 50 percent of subjects chose the inferior option. These results support hypothesis A.

Endorsement of the sunk cost principle is equally strong across treatments (Table I). Therefore, in the following analysis any differences in the experimental groups cannot be explained by differences in understanding.

Reasoning Effect

Cognitive Effort and Consistency. As expected, subjects devoted more time to the task under the reasoning condition than under the control condition (24.2 vs 11.8 minutes, $F=194$, $p < .001$). However, it is not clear to what extent the increased time reflects cognitive effort and to what extent it reflects the added chore of writing down arguments. While the writing task is time consuming, the argument listings did not appear sufficiently lengthy to account for a doubling of time. While I believe that the time differential partly reflects increased cognitive effort, hypothesis B2 is not clearly supported.

V. Exploratory Study: Results

Table I
Continuous Measures

	CONTROL n = 33	ACCOUNTABILITY n = 24	REASONING n = 27
manipulation check for ACCOUNTABILITY: 1 = very low expectation of being held accountable 10 = very high	2.69	4.21***	3.85**
endorsement of SUNK COST PRINCIPLE: 1 = strongly disagree 6 = strongly agree	5.09	5.08	5.26
Dependent Variables			
INCORRECT CHOICES (# of normatively incorrect choices, 1 to 8)	4.15	3.04***	2.67****
TIME devoted to task (minutes)	11.83	13.88**	24.19
CONSISTENCY (3 risky choices): 0 = inconsistent 1 = consistent	.394	.444	.580***
CONSISTENCY (across all 8 choices)	.326	.323	.463**

Significantly different from control group at
* p <= .10 *** p <= .01
** p <= .05 **** P <= .001

As expected, reasoning subjects responded more consistently across the set of eight problems than control subjects did (.463 vs .326, F=4.45, p < .05). The consistency differential was even greater across the three risky choices (.580 v .394, F=7.60, p < .01). Since the risky choices were more realistic, more complex and less transparent than the deterministic choices, the reasoning manipulation may have provided a particularly strong advantage here. Hypothesis B3 is supported.

Sunk Cost Error. The reasoning prompt did reduce the incidence of the sunk cost error (Table I). The mean number of normatively incorrect choices was lower for subjects in the reasoning condition than for subjects in the control condition (2.67 vs 4.15, F=13.31, p=.0005). In addition, Table II presents the proportion of subjects responding incorrectly to each of the 8 problems. The table reports one-tailed tests on differences in proportions. The reasoning prompt significantly reduced the sunk cost error in some, but not all, problems. In 7 of the 8 problems a smaller proportion of reasoning subjects than control subjects chose the normatively inferior option. The difference was significant in 4 problems and marginally significant in one (law suit, p = .15). Considering only the three risky choice problems, the sunk cost effect was very significantly reduced (p < .001) in two cases and marginally reduced in the third. Collectively these results support hypothesis B1. The sunk cost effect is less prevalent in the reasoning condition.

Table II
Percent of Subjects Choosing

	CONTROL n = 33	ACCOUNTABILITY n = 24	REASONING n = 27
Risky Choice Problems			
law suit	42.4	41.7	29.6
used automobile	57.6	45.8	14.8 ****
well drilling	63.6	45.8*	25.9 ****
Deterministic Choices			
theater ticket	54.6	25.0***	48.1
land purchase	36.4	20.8*	29.6
basketball game	72.7	66.7	40.7***
health care	48.4	37.5	29.6*
theater subsciption	39.4	20.8*	48.2

Significantly different from the control group at
* p <= .10 *** p <= .01
** p <= .05 **** p <= .001

Accountability Effect

Manipulation Check. To verify the effectiveness of this manipulation, subjects responded to the following statement on a 10-point scale anchored by "very low"(1) and "very high"(10): "The likelihood that I will be asked to justify the choice decisions that I made on this questionnaire is ___." This scale was significantly higher in the accountability condition than in the control condition (F=6.8, p = .01). However, even for the accountability condition, the mean on this scale was low (4.21 out of 10). A debriefing of subjects confirmed that the manipulation was weak. Most subjects did not believe that they would be held accountable. The instructions said only that subjects "may" be asked to justify their choices. In addition, the researcher was an outsider from another school or university.

Cognitive Effort and Consistency. Accountable subjects devoted slightly more time to the task than control subjects did (13.9 vs 11.8 minutes, $F=4.96$, $p < .05$). However, their choices were not significantly more consistent. Hypothesis C2 (cognitive effort) is weakly supported. Hypothesis C3 (consistency) is not supported in this case. Both results are disappointing, as theory would suggest substantial differences. However, these results are consistent with the weak manipulation.

Sunk Cost Error. In spite of the weak manipulation, accountability appears to have reduced the sunk cost error. The mean number of incorrect choices (Table I) was lower in the accountability condition than in the control condition (3.04 vs 4.15, $F=6.96$, $p=.01$). In all eight problems a smaller proportion of accountable subjects than control subjects chose the inferior option (Table II). The difference was significant in 4 problems ($p <= .10$). Hypothesis C1 is supported, although the results are not strong.

VI. Implications and Discussion

Although the manipulations in this experiment were simple and not dramatic, they had a significant debiasing impact. This suggests possibilities for other debiasing techniques. For example, the reasoning prompt urges subjects to briefly but systematically evaluate the options before making a choice. It provides little further structure to the choice process. A manipulation which provides greater structure might have a more dramatic impact. Consider a technique which effects both social context and task structure - dyadic choice. The theory developed in this paper suggests that dyadic choice may be less prone to judgmental error than individual choice. A dyadic task may encourage a systematic choice).strategy simply because communication favors an organized, explainable thought process. If this is true, perhaps many important consumer choices are better made collectively rather than individually.

While this paper focuses on one common judgmental error, other violations of normative economic principles are commonly observed. For example, DM's often ignore or underweight opportunity costs, fail to make choices at the margin (marginal cost = marginal benefit), and fail to treat money as a fungible commodity (Thaler, 1986). In all of these cases the normative principle is logically compelling but not intuitive. Techniques designed to encourage more systematic decision strategies might be effective in diminishing these errors as well.

Appendix

Sample Questions

Used Automobile (Risky Choice Problem)
You want to buy a new car as soon as you can dispose of your current vehicle at a reasonable price. Your local auto dealer has offered you $200 if you will sell today. Alternatively, you can try to sell the car on your own. You believe that there is a 50 percent chance you can sell it for $400 and a 50 percent chance that it will break down on you and have to be scrapped at a cost of $50. Only one month ago you spent $300 to keep the car on the road.

Will you sell or hold out for a better deal?

SELL HOLD

Land Purchase (Deterministic Choice Problem)
You are interested in purchasing land on which to build a home. You have already paid $5000 for the option to buy property A for $100,000. The $5000 is not applicable to the downpayment. As you continue your search, you discover another equally attractive site (property B) available for $98,000.

Which site will you purchase?

PROPERTY A PROPERTY B

BEST COPY AVAILABLE

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Consumer Satisfaction with Auto Insurance: The Differences Between Tort and No-Fault

Lori S. Westgate, Purdue University[1]
John T. Brady, University of Utah[2]
Richard Widdows, Purdue University[3]

Consumers seem more dissatisfied with auto insurance than ever before. One method of addressing the growing consumer dissatisfaction is by adoption of no-fault laws. This study examines consumer satisfaction with various aspects of auto insurance in a tort-liability state (Indiana) and a no-fault state (Michigan). Results show that the principle difference between the states is differing levels of satisfaction with the premium price of the insurance. Satisfaction with other factors did not differ between the states. Comparisons of satisfaction based on selected other independent factors were also conducted.

Introduction

There is mounting evidence that consumers are dissatisfied with auto insurance. In recent years California (Bowman, 1989), New Jersey (Dauer, 1991), Massachusetts (Stimpson, 1989), Arizona (Wojcik, 1990), Pennsylvania (Calise, 1991), Michigan (Mulcany, 1990) and Georgia (Knowles, 1990) have either adopted or considered measures to reduce auto insurance premiums.

Public opinion polls bear out this consumer dissatisfaction with auto insurance. A survey commissioned by the Insurance Information Institute indicated that nine out of ten registered voters in the United States would support an initiative similar to California's 20% rate roll back (Knowles, 1989). A national public opinion survey conducted for the Consumer Federation of America, the Consumers Union, and the National Insurance Consumers Organization found that 72% of those surveyed believed auto insurance rates are too high (Brostoff, 1989).

Auto insurance industry advocates contend that increased litigation, legal expenses, medical costs, and settlements all contributed more to the increase in auto insurance costs then increased industry profits. The advocates also say that while today's cars are more expensive than ever, they are not significantly safer than those of the past (Kittel, 1990; Mulcahy, 1989).

Some believe that the roots of consumer dissatisfaction lie in the traditional tort liability insurance plan where auto insurance protects the buyer against their own negligence in case of accident. According to insurance industry executive Les Maine, "... they (consumers) understand they're force to pay for it (auto insurance), and many realize that settlement amounts are soaring, but what value is it to them? Most people don't want to believe they're going to be involved in a large claims situation. Even if the situation should occur, their insurance policy will probably pay someone else, not them!" (quoted in Maher, 1989 p. 19).

This study examines the overall satisfaction of consumers with auto insurance based upon the type of auto insurance their state has, tort or no-fault. The study also looks at consumer satisfaction with various characteristics of auto insurance.

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[1] Research Assistant, Consumer Sciences & Retailing

[2] Visiting Assistant Professor, Family Economics & Consumer Studies

[3] Professor, Consumer Sciences & Retailing

Literature

The literature concerning no-fault insurance primarily consists of discussions of the elements of the plan (Witt & Urrutia, 1984a; Wenck, 1980; Todd, 1976), and empirical evidence of the benefits and costs associated with no-fault insurance.

Among the empirical results, Witt and Urrutia (1984b) found that incremental benefits were gained by consumers under the no-fault plan, as well as greater compensation to accident victims, compared to those covered by a tort-liability system. Reductions in premium price for consumers of no-fault versus tort-liability insurance were found by Meier and LaFollette (1987). In addition, contrary to the expectations of moral hazard theory, no-fault insurance did not lead to an increase in traffic fatalities (Kochanowski & Young, 1985; Zador & Lund, 1986). In a United States Department of Transportation report (1985), it was concluded that compared to states with tort insurance, residents in no-fault states were more likely to be compensated as an accident victim, receive higher compensation payments on average, and receive them more quickly.

Not all research results find no-fault as superior in all respects. In the United States Department of Transportation report (1985), it was found that average premiums in no-fault states were higher than in tort states. Higher premiums in no-fault states were also reported by Johnson, Flanagan, and Weeks (1983). These findings contrast to the Meier and LaFollette (1987) study. The Department of Transportation report also noted that no-fault insurance did not increase the number of traffic accidents in those no-fault states, however a study by Landes (1982) found that no-fault did nothing to reduce the number of accidents either.

There is still public support for the concept of no-fault insurance. A recent study by the Insurance Research Council (1990) concluded that a majority of consumers would prefer a system where compensation comes from a person's own insurance company rather than from the other another's company.

Methods

This project used methods similar to those used in the Texarkana credit studies (Lynch & Blades, 1974). Two counties, one in Michigan and another in Indiana, were selected for their demographic similarities and close proximity. This research method has the advantage of compensating at least partially for factors such as imperfect information, urbanization, and demographic variability across a large area such as a state. The method does reduce the ability to generalize to all consumers of in the two states.

A questionnaire was mailed to 600 residents in Branch county, Michigan (a no-fault state) and 600 in adjacent Steuben county, Indiana (a tort liability state). The sample was randomly selected from telephone books. The questionnaire was directed to the household member most knowledgeable about car insurance. Approximately 250 of the questionnaires where undeliverable, leaving a effective return rate of just under 30% or 268 completed questionnaires. Nearly 70% of the sample consisted of males. The respondents tended to be well educated (65% reported some post secondary education), and 45% of the sample had an average personal income of over $25,000 annually. The frequency of responses for selected questions are given in Table 1.

Comparisons of the respondents' characteristics with census data for the region indicates that the sample is more likely to be male, is likely to be better educated, and is more likely to have a higher income than others in the population of the two counties used in the analysis. Since the questionnaire was directed to the most knowledgeable household member, the increased number of males in the sample is not a particular problem. The higher than average income, however, suggests that low income households are probably under represented in the sample. Formisano, Olshavsky, and Tapp (1982) found that low income and poorly trained consumers were less likely to have studied information on insurance before purchasing and this might explain the lower response rates.

Table 1
Frequencies and Means of Selected Questions

Characteristic	Frequencies	
Claims filed with car insurance company during the past 5 years.	45%	None
	44%	1 to 2
	10%	3 to 5
	2%	Over 5
Total costs of annual car insurance premiums.	1%	Less than 200
	13%	201 to 400
	21%	401 to 600
	22%	601 to 800
	14%	801 to 1,000
	9%	1,001 to 1,200
	19%	Over 1,201
Before tax personal income.	4%	Under 5,000
	8%	5,001 - 10,000
	13%	10,001 - 15,000
	17%	15,001 - 20,000
	12%	20,001 - 25,000
	20%	25,001 - 35,000
	14%	35,001 - 50,000
	6%	50,001 - 75,000
	5%	Over 75,001
Gender.	70%	Male
	30%	Female

Results

Those surveyed were given a list of characteristics of auto insurance and asked to rank them from most important to least important. Respondents were also given a similar set of characteristics and asked to rate their satisfaction with their current insurance based on these factors. Satisfaction was measured by a four point scale ranging from very satisfied to very dissatisfied.

When asked to rank the important characteristics of auto insurance, consumers in the Michigan, the no-fault state, and Indiana, the tort liability state, had no significant differences in the way factors were ranked. Low premiums ranked highest in both states, and the right to sue others was ranked lowest in both. All other factor were ranked in essentially the same order respondents in both of the states as well.

When the responses concerning satisfaction with different characteristics of auto insurance are compared, only one significant difference was identified. Those in Michigan, the no-fault state, were significantly less satisfied with the premiums of their auto insurance than were those in Indiana. Other factors, such as the speed of claims resolution, protection against uninsured drivers, opportunity to sue others, service of company representatives, and fair settlement had no significant differences based upon the state of residence. Also, in terms of the overall satisfaction of consumers with the type of insurance their state offers, there were no significant differences between the two groups. Findings based upon state and type of insurance are summarized in Table 2.

Table 2
Satisfaction with Insurance Characteristics:
Mean Responses and Analysis of Variance Results Based on Type of Insurance [1]

Characteristic	Indiana (Tort)	Michigan (No-fault)	F
Speed of claims resolution:	1.806	1.690	1.744
Premium:	2.596	2.969	16.184***
Protection against uninsured drivers:	2.062	2.216	2.823*
Total coverage protection:	2.065	2.101	.203
Opportunity to sue:	2.119	2.176	.502
Service and friendliness of company personnel:	1.673	1.598	.791
Equitable/fair settlement compensation:	1.990	1.955	.166
Overall satisfaction with your type of auto insurance:	2.008	2.210	2.474

* $p < .10$; ** $p < .05$; *** $p < .01$
[1] Mean scores based on four point scale.

Comparisons were made between groups of consumers based upon factors other than the type of auto insurance. Findings, based upon median splits for different factors, indicate that those with three or more claims in the past five years were significantly more satisfied with the speed of claims resolution than those who had not filed a claim in the past five years. Those with lower premiums, $600 dollars or less, were significantly more satisfied with the premiums they paid than were those with higher premiums, $801 or more. Those with lower premiums were significantly less satisfied with the level of coverage their insurance provided. In terms of overall satisfaction, neither the number of claims, premiums, nor income had a significant effect. Findings related to these other factors are summarized in Table 3.

Table 3
Satisfaction with Insurance Characteristics:
Mean Responses and Analysis of Variance Results Based on Selected Variables [1] [2]

	Claims History		Premium	
Characteristic	Low	High	Low	High
Speed:	1.961	1.429	1.803	1.633
	(18.608)***		(2.826)*	
Premium:	2.731	2.714	2.513	3.000
	(.011)		(19.722)***	
Protection from uninsured:	2.180	2.111	2.179	2.089
	(.205)		(.694)	
Total Coverage:	2.130	2.000	2.182	1.989
	(1.117)		(3.950)**	
Opportunity to Sue:	2.135	2.174	2.129	2.200
	(.097)		(.619)	
Service:	1.777	1.552	1.634	1.627
	(2.807)*		(.000)	
Fair Settlement:	2.090	1.923	1.945	1.930
	(1.615)		(.023)	
Overall:	1.899	1.708	1.700	1.926
	(1.248)		(3.548)*	

* $p < .10$; ** $p < .05$; *** $p < .01$

[1] Mean scores based on four point scale.

[2] Figures in parenthesis are F ratios.

Conclusions

The findings of this study indicate that the premium which consumers must pay for auto insurance is the most important factor in determining the level of consumer satisfaction with a particular type of auto insurance. In fact, consumers in Michigan, the no-fault state, had higher average insurance premiums than did those in Indiana (a median between $401 and $600 in Indiana compared to a median between $601 and $800 in Michigan) which probably explains the lower level of satisfaction with premiums for respondents from Michigan. If the consumer recognized a savings in time or legal expenses, which probably few did because of the low average number of claims filed, then the savings were not considered significant enough in the mind of the consumer to overcome the increased money costs.

Consumers seem relatively satisfied with auto insurance regardless of type. Almost all of the characteristics of insurance about which respondents were questioned had average responses between very satisfied and satisfied. The one exception was premium price where 64% of respondents reported themselves as dissatisfied or very dissatisfied. Based upon the results of an analysis of variance, consumers believe that value for money is a problem even if premiums are lower.

A limitation of this study is the relatively low levels of urbanization in the two counties sampled. It is possible that in highly populated areas where the chances of accident or theft are higher, consumers might be more satisfied with no-fault auto insurance, particularly the rapid claims response.

From a policy perspective, this study would suggest that legislators attempting to increase consumer satisfaction with auto insurance should focus on premium savings first. The results indicate that no-fault will only be accepted as superior to tort insurance if it can be shown to reduce the price the consumer must pay for auto insurance. So far, at least for those in Branch county, it has not.

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Credit Education for the Disadvantaged Consumer
(Panel Summary)

Jane Schuchardt, U.S. Department of Agriculture[1]
Carole Glade, National Coalition for Consumer Education[2]
Nayda Torres, University of Florida[3]
Patricia Walt, Westmoreland County (Pennsylvania) Community College[4]

Credit education often misses consumers who need it the most. A joint project of the National Coalition for Consumer Education (NCCE) and AT&T Universal Card Services, Inc. provides grants to help low income, low literate, and otherwise disadvantaged consumers become better equipped with the lifelong skills to make wise credit decisions. This panel discussion familiarized participants with the NCCE/AT&T Consumer Credit Education Fund, showcased two projects supported by the Fund, and outlined strategies for teaching credit principles to disadvantaged consumers.

The Challenge

Disadvantaged consumers, rather they be low income, low literate, mentally disabled, or non-English speaking, have one characteristic in common--a daily struggle in the financial marketplace. Without appropriate consumer competencies to make decisions, or sufficient money to rebound from errors, disadvantaged consumers find themselves targets for fraud, bad deals, and temptations that lead to mismanagement. Credit, an essential financial tool if handled correctly, is a prime problem.

Fraudulent credit grantors prey on disadvantaged consumers' two weaknesses--bad credit report and denial for credit. According to the U.S. Federal Trade Commission (FTC September, December 1991), credit repair and advance-fee loan scams cause the most problems.

There is a brisk business among so-called "credit repair" companies that charge from $50-$1,000 to "fix" a credit report. Most companies vanish once the money is in hand. Consumers fail to understand there are no easy cures for an ailing credit history unless, of course, there are genuine mistakes in the report.

Other companies "guarantee" consumer and small-business loans for a fee, ranging from $100 to several hundred dollars, paid in advance. Again, once the con artists get the up-front money, they disappear. Consumers fail to understand that, though legitimate credit grantors generally charge fees to process a loan application, they never guarantee an applicant will qualify.

Disadvantaged consumers also are victims of legitimate, but bad, deals. Rent-to-own programs (Swagler 1989) are one prime example. Consumers are lured by low payments on appliances or furniture with the promise of eventual ownership. Other attractive features are quick delivery, no down payment, and no credit check. Consumers fail to understand that if one payment is missed, the company takes the merchandise. Also the "low weekly payments" add up to an exorbitant total and do nothing to establish a credit history for the consumer.

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[1] National Program Leader, Extension Service

[2] Executive Director

[3] Associate Professor & Extension Specialist

[4] Coordinator, College Just for You

Finally, credit mismanagement, which can challenge anyone, is especially prevalent among disadvantaged consumers. Credit often is misused as a source of income to meet monthly obligations or as a way to possess wants, not needs. Another problem is to equate credit with status--often to the point of putting the minimum amount on a monthly balance as a higher priority for payment than necessities such as food and utilities.

The Response

With education, disadvantaged consumers can learn how to do for free what a credit repair company might offer. With education, guaranteed loan scams can be avoided. With education, the total, rather than week-to-week, costs of rent-to-own deals can be understood. With education, consumers can be equipped with the skills to use credit to their advantage.

That was the hope of the AT&T Universal Card Services Corporation, Jacksonville, Florida, in April 1990 when it earmarked $1 million to be used over a four-year period for consumer credit education grants. AT&T linked with the National Coalition for Consumer Education (NCCE) to manage the NCCE/AT&T Consumer Credit Education Fund.

NCCE, now in its 12th year, brings together business, consumer groups, educators, media, government, and community agencies as equals to focus on consumer life skill education in the community and work place. Through the Consumer Credit Education Fund, NCCE and AT&T bring resources to local, non-profit organizations for the delivery of consumer education.

For the first funding year, 1991, the 12-member Fund Advisory Board sought proposals for education reaching disadvantaged consumers. Nearly $200,000 was distributed to 21 community-based programs (Koehler 1991). More than 350 proposals were received, a strong indication of need. Sustained interest by non-profit organizations (e.g., State and County Extension Services, Better Business Bureaus, Consumer Credit Counseling Services, State Offices of Consumer Protection) is expected throughout the 1992, 1993 and 1994 funding cycles. Following are summaries of two projects.

Target--Working Poor Hispanics

The pilot audience for this project conducted by the Florida Cooperative Extension Service was Hispanic, low-wage service workers (e.g., maids, ground crews, bell hops, and kitchen help). Their employers, major hotels on Marco Island, bus the workers from their homes daily.

Hispanics have special needs, since in addition to low wages, there are cultural differences, language differences and non-exposure to credit in their homelands. Many have been denied credit due to low income or poor money management skills. Others may only have access to credit with higher interest rates, some may not know about credit options, while others may be over-extended.

In an effort to have these Hispanic workers improve interaction with hotel guests, English was taught to the workers on company time. The Extension project provided consumer credit education during these classes and on the daily bus rides. Educational materials were prepared in written form with both English and Spanish on the same page. Audiotapes, for use on the bus, and a videotape also were prepared. Outcomes were measured by using a pre-post test.

Target--Mentally Handicapped Adults

The number of mentally handicapped adults living in group homes is increasing as the trend to move people out of institutions and into "normal" lifestyles widens. Westmoreland County Community College, in cooperation with the Westmoreland County Association for Retarded Citizens and Mental Retardation Department, began to develop enrichment programs for these people in 1986. The underlying purpose of this programming was to enhance their lifestyles by developing an increased sense of self-esteem.

The community college is a natural setting for such programming. Mentally handicapped adults are often treated as children. College attendance is thought of as an adult activity; therefore, the exposure of this group to college facilities provides them with a sense of "belonging" to the normal population.

Classes marketed as "College Just for You" were first offered in 1987. Topics included introductory biology, chemistry, robotics, watercolor painting, music, personal grooming and fitness. After receipt of the Consumer Credit Education Fund grant, the Consumer Credit Literacy Skills classes were added.

The 62 students were higher functioning, Supplemental Security Income recipients who worked, or planned to work, part-time. These adults take responsibility for handling personal finances, with limited supervision. They require continuous reinforcement of money management skills to assure they live within their means.

Strategies

As the panel interacted with participants, these strategies for educators of disadvantaged consumers became evident:

- For many consumers, credit is most effectively taught in the context of the total personal money management process.

- Educators of disadvantaged consumers face heavy commitments before knowledge is gained and monumental rewards when behavioral change in evident.

- Education must come to people on their terms, where they are receptive, and when they have the time. Work place education, community-based education, and education around social services such as health centers, day care centers, and Head Start Programs provide access to the disadvantaged consumer.

- Educators must be sensitive to the cultural differences of groups. The United States IS NOT a melting pot. Social, economic, and physical groups affect actions, spending patterns, and learning modes.

- Sufficient information and materials exist on credit. The priority now is delivery of this information, in terms and situations understandable to the audience.

And, finally, a plea to the financial services industry--follow AT&T's lead in supporting consumer education. In an era of economic downturn and financial insecurity for many consumers, business leaders, government officials, researchers, and educators must all take responsibility for improving the credit literacy of Americans.

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The Journal of Consumer Affairs: On Being a Reviewer, Author, *et al.*

Robert O. Herrmann, The Pennsylvania State University[1]
Jane Kolodinsky, University of Vermont[2]
Carole J. Makela, Colorado State University[1]
Mary Ellen Rider McRee, Purdue University[2]

The issue of *JCA* (Volume 25, Number 2, Winter 1991) sent to ACCI members and subscribers in December 1991 marked 25 consecutive years of publication of the *Journal*. This is a milestone for ACCI and the *Journal*. In addition to recognition of this milestone, the workshop panel explores the roles of authors, reviewers, editors, and readers with the intent to encourage greater participation in the workings of the *Journal* and to gain ideas from the audience to enhance the role of this scholarly journal.

A panelist and former editor, Robert Herrmann, captures the role of *JCA* in our field when he stated,

> We had several goals for the *Journal* when I was working with Rex Warland as associate editor. I thought it was very important to get a journal that was intellectually and academically respectable, one that would carry appropriate points for your professionals in the battle for promotion and tenure, one that they would be proud to contribute to. Also, we wanted something that would make a real contribution to the field. So, we were always trying to balance multiple goals, particularly the need to try to help young professionals publish, and at the same time hold standards high and publish useful stuff that would have a useful impact" (Merchant, 1987, pp. 257-258).

How did *JCA* get started? After much discussion on the part of members (see Merchant, 1987 for more details), David A. Swankin presented the following challenge at the 1966 conference--26 years ago.

> And so I ask: Could not CCI undertake to publish a professional journal in the consumer field? Is not the talent right here in this room to assure it being of first-rate quality--and self-supporting at that? Is there any other activity CCI could engage in that it would do better and more effectively, and fill a void as great as this one? And finally, if CCI says "no" to the proposal, who is likely to say "yes"? (Swankin, 1967, p. 12).

For newer members, ACCI was CCI--Council on Consumer Information--at that time.

The first issue of *JCA* included this message from editor Gordon E. Bivens.

> It is a pleasure to welcome you as a reader--and potential contributor--to *The Journal of Consumer Affairs*.
>
> The primary objective of the *Journal*, as determined by the CCI executive committee, is to report consumer-focused research. Secondarily, it shall serve as a forum on consumer issues, present book reviews, and perform related functions appropriate to a scholarly/professional journal dedicated to facilitating and improving the performance of consumer affairs professionals whose academic and/or professional training and current activities cover a variety of fields and

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[1] Professor

[2] Assistant Professor

> disciplines. In this sense, the *Journal* recognizes as one of its prime functions that of making available the research findings of a number of disciplines which have a major thrust toward understanding the consumer, his behavior, and the implications of his economic, social, legal, and political environment.
>
> In view of today's inundation with the printed word, a few comments might be in order about "Why another journal?" Individual articles in this and future issues of the *Journal* might have appeared in other journals (though, admittedly, some of the journals of the traditional disciplines seem not to reflect the ground swell of activity in the consumer field), but, except for those whose journal-reading scope covers an extremely wide range, any such articles would go unnoticed by consumer specialists in other disciplines. Thus, it is hoped this *Journal* will bring a focal point for reporting the consumer-oriented research, progress reports on action programs in consumer affairs, exchange of reasoned viewpoints on public consumer issues, book reviews, replies, new notes, and other items of interest to scholars, teachers, students, and professional activists with a major, or even a minor, part of their activities in consumer affairs.
>
> We believe this assessment of need for a journal is accurate and hope that you will contribute to the *Journal* by offering manuscripts for consideration for publication, by sending replies or notes about articles which appear, progress reports of projects, and in other ways become involved in creating as well as "consuming" future issues." (Bivens, 1967, pp. 5-6).

These words as well as those of Swankin and Herrmann illustrate the quality of thought in those supportive and instrumental in the development and progression of the *Journal*.

Twenty-five years of the *Journal* have enabled the publication of 294 papers, 237 viewpoints and communications (also labeled research notes, comments, shorter papers), and 297 book reviews in 50 issues. In the Winter 1984 issue (Volume 18, Number 2) a cumulative index of the first 17 years of the *Journal* and 20 annual proceedings was included. It contains both author and subject indices.

In noting the role of the *Journal* in the field, it is important to recognize the six editors who have diligently worked to foster and continue the purposes of *JCA*. The editors and years of service are Gordon E. Bivens, 1967-1973; Joseph N. Uhl, 1974-1977; Robert O. Herrmann, 1977-1980; Monroe Friedman, 1980-1983; David B. Eastwood, 1984-1990; and Carole J. Makela, 1990-.

For those interested in the development and progression of the *Journal* (in addition to the *Oral History*, Merchant, 1987), articles reviewing selected periods of the *Journal* provide insight into trends for the topics included (Geistfeld and Key, 1986) and interdisciplinary nature of the manuscripts included (Drennen and Makela, 1990).

JCA has become an important journal in the achievement of tenure for faculty. Beginners as well as established members of the organization are published in *JCA*. It is important that a range of research methodologies and topics sufficiently address the present and future concerns of the field. The quality of *JCA* needs to be maintained.

The editor of a blind-refereed journal acts as the coordinator, not the controller. Authors and reviewers are the main forces behind a journal's content. An editor, cannot publish on a topic for which no manuscript is received and/or deemed publishable by the reviewers. As we look to the future of *JCA*, let us explore the roles and expectations involved in having a quality scholarly journal respected in the field. Gleser termed scientific research and its publishing as a "community activity" (1986). It is not the lonely activity we think it is.

Authors

Journals need to receive quality manuscripts to be able publish articles that add to the knowledge of the field while fulfilling the objectives of the journal.

A basic responsibility of the author is to submit an original piece of work which has not been published elsewhere and is not under review elsewhere. Preparation of different papers, based on the same research but aimed at different audiences, may be appropriate. When authors plan two such submissions to different journals, they should explain their plans carefully to both editors and be certain the plan is acceptable.

Manuscripts should made a clear contribution to the literature of the field. For *JCA* this means that the results should have clear implications for consumer interest including protection policy. Other journals may be more appropriate outlets for descriptive papers on consumer behavior without clear applications to the formulation of policy, to consumer education or information programs; most demand and price analyses without clear consumer policy implications; and consumer behavior papers with implications for marketing management.

Authors should study the editorial statement and recent issues of a journal to help determine whether their paper is an appropriate submission. However, they should not assume a topic is not appropriate simply because a journal has not recently published any articles on it. If in doubt, the author does have the option of telephoning the editor for a judgment. A discussion of both topic and focus is important. This can save an unnecessary review and help the author find an appropriate outlet more quickly.

In a paper, its potential contribution and objectives should be spelled out clearly within the first two or three paragraphs. Some authors get into extensive preambles about the importance of a problem and leave the reader guessing far too long what the paper is about.

The theoretical/conceptual framework is a critical part of any paper, providing a basis for the analysis. Because the consumer field is interdisciplinary, a wide variety of sources may be useful. A common problem is that authors assume that nothing relevant has ever been published on the specific problem. This is seldom true, especially if one searches well and checks related fields.

Authors should recognize that JCA, as an applied journal, has an audience with varying levels of statistical expertise. Authors should consider these variations in the presentation of their statistical analyses and results. Authors should help readers by including parenthetical phrases explaining the use of statistical techniques (e.g., "the independence of the distribution of X from the distribution of Y was tested with Chi-squared analysis"). Authors also can help readers by presenting results in graphic and tabular forms. Examples also can be helpful (e.g., results indicate that with an income increase of $1,000 a household with the characteristics discussed can be expected to spend $200 more for food).

Authors also can help readers understand complex analyses by re-estimating using simpler techniques. For example, once a complex interaction has been found using multivariate techniques, show it with a simpler technique. The complex analysis may then go into an appendix. In many cases, authors must choose, whether they wish to impress, inform, or convince readers. Too often displays of statistical pyrotechnics seem designed mostly to impress or to present computer output with little author input as to its relevance.

A weakness of many manuscripts is that the discussion and conclusions do not follow logically from the statistical results nor do they show in-depth thinking. A recent analysis of submissions to American Psychological Association journals (Fiske and Fogg, 1990) found this to be the most common problem in the sample of submissions reviewed. The problems fall into two general categories--the discussion was poorly linked to the results or the interpretation and conclusions were poorly developed. Too many authors seem to be exhausted by the time they have presented results and short-change or omit interpreting results or presenting implications. Attention needs to be paid to discussion of research needs and to logical implications for use in the marketplace. It is translating the implications into "real world" content readable by those in some of the social sciences who have difficulty understanding economic jargon. This may be needed to develop interest in consumer literature in others including policy makers. In the discussion section, authors should point out limitations of the study and their effect on the results. They also should link the results to other works. Do the results support or contradict the work of others?

From the perspective of presenting the paper, it should be held to a reasonable length. An exceptional paper may merit extra space. The Journal of Consumer Research reviewer's sheet calls for an assessment of the length-to-contribution ratio (Monroe, 1990). This is a good way for authors, reviewers, and editors to think about appropriate length.

Clarity of presentation depends on short sentences and short paragraphs. Generous use of sub-headings also helps. Many authors use overly abbreviated computer labels for variables. This is an imposition on the reader. Space may be saved but clarity is lost and reading time extended. A number of editors suggest that authors get a colleague to read their paper before submitting it. Trading this favor back and forth may make it less burdensome. Too many papers appear to have never been scanned by human eyes (or by a spell-checker, for that matter) before they are submitted. Grammar checks or other writing analysis software can also be helpful as these often catch the correctly spelled but incorrectly used words ("of" for "or").

Catch the typos!!! Try to adhere to the specifications of the journal, though it is unlikely a manuscript is rejected because the first draft did not adhere exactly, especially if it is a resubmission. If it is a resubmission, at least make changes to make the topic appropriate for the journal. Make sure all references are included, accurate and complete (Rudolph and Brackstone, 1990).

The author's role can be summed as noted by Hamermesh (1992). He indicated that manuscripts are ready for submission the draft before what the author might consider to be final--after review by colleagues and at least one presentation. That means in front of peers during a seminar, at ACCI, or other meeting. What does this do when things are published in proceedings? Proceedings are shorter versions of papers needing refinement. Ask for feedback from colleagues even though they may be pressed for time. The reciprocation is a vital part of the "community activity."

After a manuscript has been accepted and prepared for publication, a crucial responsibility of the author is to check the galleys carefully. Editors or their proofreaders do this too, of course, but the article is printed under the author's name. The number of mistakes in titles, headings, table titles, and text which get into print is surprising.

Reviewers

"There are so many things wrong with this paper I won't begin to outline them."
"You can not use the framework you chose to study this question."

These are not the best ways to begin a review. An author received the first comment on one manuscript and the second on two others (not even the same subject). These types of comments discourage the researcher, especially the young scholar. Instead, the reviewer should point out the good things about the paper first.

Suggestions for the author should be offered diplomatically. Criticisms should be directed at the paper, not the author personally. Hypercritical comments are hard on morale and seem to be beyond the bounds of collegiality. Such comments seem to be an increasing problem both at JCA and elsewhere (Monroe, 1990). In these difficult times, we have a vested interest in making our field as strong and effective as possible. Constructive criticism offered thoughtfully helps us all.

As for the second comment, new theories and applications are developed through innovation. Many reviewers (as is the case with most humans) are averse to change and newness. A reviewer should be open to new ideas, if they are clearly presented and substantiated.

Reviewers should not expect authors to rewrite a paper to conform to the reviewer's vision of an ideal handling of the problem, be that theory, methodology, analyses, and/or applications. The paper is the author's creation. The reviewer should help improve it for the reader and the field, not try to reconstruct it.

Reviewers look for acceptable manuscripts with a few general characteristics. First, they flow logically throughout from introduction, review of literature, theory, methods, results, conclusions, and discussion. For the most part, papers reviewed for JCA and rejected have been missing adequate treatment of theory or development of conclusions.

The chief responsibility of the reviewer is to help the editor assess the significance of the contribution which the author(s) made. This involves assessments of the conceptual framework, appropriateness of the analytical technique(s) and correctness of its use, and the usefulness of the results. For this, reviewers draw on their knowledge of the literature and the discipline.

Most editors agree, perhaps a bit reluctantly, that the reviewer is not responsible for catching all possible errors. This, in the beginning and the end, is the responsibility of the author. Yet inadequacies in presentation are distracting to reviewers and may be reason for concern, "Will the grammatical, spelling, and other presentation errors be corrected before publication?"

Reviews assist authors not only by the service they render. Well-stated strengths and weaknesses of a manuscript enable the author to respond and revise more effectively.

Other responsibilities of reviewers relate to the timeliness of the process. In cases where reviewers feel they are unable to assess some parts of a paper, they should indicate this to the editor. This does not preclude assessment of the paper. In cases where they are unable to assess major components of a paper, the paper should be returned promptly to the editor with an explanation.

Likewise, reviewers need to abide by the time guidelines provided by the editor. Based on looking at the efficient use of resources, reviewers must realize that when they sit on articles for weeks/months past deadlines--efficient use of resources of all involved (editor, writer, etc.) is not being achieved.

Further information on the role and techniques of reviewing are found in literature (Blank, 1991; Shriver, 1990; Smith, 1990). A compilation of these will be developed for *JCA*.

Editor

The chief responsibilities of the editor is to ensure that authors get a prompt and fair review and that the journal is published. *JCA* editors have done a pretty good job, over the years, of holding reviews times down. To do this, the continuing cooperation of reviewers is essential. Currently most responses to authors are sent three to four months after receipt of the manuscript. Any author who has not gotten a response after four months should inquire about the status of their paper. Manuscripts do get lost and mislaid or additional reviews may be necessary.

When a decision has been made, the editor should communicate this to the author as clearly as possible. Some journals have codified the possible responses to help make them clear to authors and to force editors to decide what disposition they want to make of a manuscript. The Journal of Consumer Research (Monroe, 1990) offers reviewers six alternative from which to select in advising editors:

Accept unconditionally
Accept subject to minor revisions - no further reviews will be done
Encourage revision in accordance with accompanying comments - manuscript has potential, but has serious deficiencies, further review will be needed
Reject in current form but allow resubmission of a substantially different version as outlined in author comments - manuscript is seriously flawed, but salvageable; reconceptualization or reanalysis may be required
Reject, despite some merit, because the likelihood of successful revision is remote - several serious problems exist
Reject unconditionally - has no potential even with revision, trivial or inappropriate topic, flawed data set.

The use of this or a similar set of categories should be considered for use by *JCA* reviewers and the editor.

Presently, *JCA* uses five categories--accept, as is; accept, needs minor revision; marginal, needs revision; very marginal, needs major revision; and reject. Reviewers often select "an in-between" category and/or reviewers select disparate categories (i.e. accept, needs minor revision and reject).

Editors sometimes receive papers which are well-executed but deal with minor topics, have a limited scope, or add little to knowledge. Flawless execution does not make up for a trivial topic. Such papers make little contribution and as space is limited in journals especially those published semi-annually, editors usually conclude that there are more valuable inclusions.

Readers

Readers have dissimilar purposes for scanning or reading a journal. Yet whether their purpose is ideas for application, foundation knowledge for research, applicable methodologies, or status of the field, readers should find the articles readable and generally understandable. Granted the details or finer points of a methodology or analysis may need study, their presentation should not discourage reading and understanding the article.

What makes manuscripts reader-friendly? Easy writing--don't use million dollar words (Bachtel, Walters, and Eastwood, 1986). If the author writes tightly, as noted previously, the reader will be much the better for it.

The reader should be able to expect. (1) Tables that stand alone with variables labeled clearly, not X1, X2, X3, etc. (often seen in path analysis) or computer labels. (2) Logical progression from introduction, review of literature, ..., to thoroughly thought out implications. (3) Adequate references that help others progress in the field as well as reflect the author's understanding of the field. Published papers with seven or fewer references are unacceptable unless someone is charting absolutely virgin territory. (4) An understanding of the article without numerous rereadings. Three is suggested as the limit. For general understanding and information one reading should be enough for most *JCA* readers.

Summary

The Journal of Consumer Affairs has achieved 25 years of publication with the contributions of the time and efforts of many authors, reviewers, readers, editors, and ACCI officials and members. Continued interest and participation in the process from initial manuscripts to reader friendly published articles are essential. ACCI members participate in most of the process. Yet we are concerned that in 1991 65 percent of the authors or co-authors were not ACCI members. *JCA* needs all ACCI members as authors, reviewers, and readers.

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The Consumer's Role
In A Changing Marketplace

Address By

Jim Edwards, M.P.[1]

Ladies and Gentlemen, it gives me great pleasure to address the 38th Annual Conference of the American Council on Consumer Interests. Mr. Blais regrets that he could not attend today and that this is the first time your organization has ever held one of its gatherings outside of the United States. On behalf of all Canadians I would like to welcome you to our country, and extend my best wishes for an enjoyable visit.

I was invited to speak to you today about The Consumer's Role in Our Changing Marketplace. In particular, I would like to look at the role consumers can play in helping governments protect them and the ways we can include consumers in framing marketplace legislation. Finally, I would like to forecast a bit about the future of consumer protection in light of marketplace changes.

Systems in Canada and the United States are not always similar. However, with regard to the issues I have just sketched, out two countries face many of the same economic and consumer challenges. Both nations are working their way to economic recovery. Both face major challenges with regard to competitiveness and prosperity. Changing conditions are affecting our marketplace, and the way consumers must operate within them.

Role of Consumer and Corporate Affairs

In Canada, the mission of the Department of Consumer and Corporate Affairs in to promote "The Fair and Efficient Operation of the Marketplace." We carry out activities in areas which, in the United States, would be the responsibility of several different federal departments.

Perhaps the easiest way to understand the role of the department is simply to view it as the "Department of the Marketplace."

A Market needs both buyers and sellers. Consumer and Corporate Affairs Canada has worked with both groups to ensure that Canada's markets operate fairly and effectively. As you are undoubtedly aware, protection of consumers cannot be effectively achieved without the cooperation of business.

In the consumer field, the department sets and enforces standards for some products and services, and guarantees correct weights and measures. Where necessary it ensures that proper information is made available about products and services, and informs consumers about available choices. It minimizes the hazards related to certain products through the issuance of safety standards and information. It provides protection mechanisms for our most vulnerable consumers.

Many of the department's corporate activities also have a direct or indirect bearing on consumers. It maintains and encourages the free circulation of goods and services in a climate of healthy competition and establishes a clear framework within which businesses can operate. A strong guiding principle in this regard is that consumers are the ultimate beneficiaries of a prosperous and competitive business sector.

As you can see, the mandate of Consumer and Corporate Affairs Canada is multifaceted. Essentially, its overall objective is to try to ensure that the Canadian marketplace is equitable for consumers, is dynamic and innovative, and contributes to the prosperity of Canadians in all regions of a country which is geographically very large.

The fact that many of the department's framework policies to protect consumers have been functioning for a very long time (20 to 25 years, in some cases) does not make them any less important. Indeed, some would argue that they are so important and they have become entrenched to such a degree that we have come to take them for granted.

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[1] Parliamentary Secretary to the Minister of Consumer and Corporate Affairs

At the same time, we must be careful that we are not blind to the need for change. Dynamism and innovation will need to be stressed as the nineties will undoubtedly see dramatic changes in the consumer/marketplace relationship.

Ironically, the nineties will have to address the needs of our most assertive consumers as well as those of our most vulnerable consumers.

I think we are already witnessing a growing consumer assertiveness in the marketplace. Today's consumers are less willing to have choices made for them. They are still looking for the best information and the best prices. They still want product popularity of the so-called "green" or environmentally-friendly products has shown that consumers want the firms they patronize to prove their ethical behavior and social consciousness.

The concerns of more vulnerable consumers in an increasingly complex marketplace also need to be addressed.

In spite of well-developed public education systems, significant proportions of the populations of all OECD nations have literacy and numerical skills which are not adequate to enable them to function with confidence in the marketplace. Changing immigration patterns are bringing to our countries people who are unfamiliar with our marketplace practices and people who do not speak or read the host country's language.

Additional consumer issues might also emerge related to the ever-increasing proportion of our population composed of older people.

I think it is safe to predict that the importance of the consumer's contribution to overall economic prosperity will become more and more recognized. Consumers are often neglected and even ignored in terms of larger economic issues.

Here in Canada, for example, consumers account for 60 percent of final demand for goods and services, as opposed to 20 percent each for business and government. For all the reasons I have cited, it will no longer be possible in the future to dismiss consumers as invisible, unthinking or automatic contributors to the economy.

Therefore, as we work our way out of the recession and towards prosperity, the role of the consumer in today's rapidly changing marketplace will be of tremendous importance.

I would also argue that the consumer issues that are emerging in Canada today are characteristic of trends throughout industrialized economics; the way in which the consumer/marketplace relationship is evolving in Canada has a general relevance to other economically developed nations.

Many of the very significant changes which are having an impact on the Canadian economy are also being faced by other industrialized nations in today's global environment. A brief look at the evolving marketplace of the 1990's can help show the role of the consumer in the economic transformations which are taking place.

Changes in The Marketplace

A. Technology

First of all, rapid advances in technology have profoundly changed the marketplace. They have also caused a shift in focus from the making of products to the delivery of services. Technological advance can bring many benefits to the consumer as end user -- for example, with electronic banking.

Yet at the same time there is growing skepticism among consumers as to whether new technology is always genuinely practical, and whether its cost efficiencies will always be passed along to consumers.

All consumers - children and adults love new toys and gadgets. But business and consumer publications have recently noted that there comes a point when we may have "too many bells and whistles."

For example, in its November 1991 issue, Consumer Report noted that, if a microwave oven has ten cooking levels, people will generally use only five of them. If enhanced choice for its own sake increases price without providing noticeable benefits, consumers may begin asking; "Why pay more?"

This is not to say that consumers wish to forego the benefits of technology that they expect to share: lowered costs, improved quality and more and better products.

But there is a down side to technology as well.

Technological advances affect the use of telemarketing and electronic data banks and consequently increase the risk of threats to privacy.

Technology might also create information problems for those who do not have suitable levels of technical literacy. There is a further danger that technological change could widen the gap between consumers able to cope in the marketplace and more vulnerable consumers.

B. Harmonization

Harmonization is also having a growing impact on consumers. The emergence of trading blocks and trading agreements in the contemporary world is continuously exerting pressure for countries to harmonize their practices and standards; this naturally has implications for consumers.

For example, as a trading nation, Canada is highly sensitive to the actions of its major trading partners. The new U.S. Nutrition Labelling and Education Act is a case in point.

The act, as you know, requires mandatory nutrition information on the labels of most packaged food sold in the United States. The United States is a huge market for Canadian food exports. Not surprisingly, Canadian business has been asking is we are going to harmonize our nutritional labelling requirements with that of the U.S. In order to answer this questions, Consumer and Corporation Affairs Canada is working together with consumer and business groups to consider the best approach for Canada.

These and other trends in today's globalized and harmonized marketplace will inevitably affect individual consumers. For example: what might happen to consumers if a domestic business community felt that it was put at a competitive disadvantage by having to comply with national standards that its international competition did not have to meet?

C. Costs of Consumer Protection

There are other questions as well. How can we determine the cost on business -- in dollars and in competitiveness -- of regulations and programs designed to protect consumers? Is the game worth the candle? Since these costs are likely passed on to consumers, how much protection can we afford to pay for, as consumers and as taxpayers? Conversely, would costs -- economic, health, safety -- simply be shifted to other marketplace participants if the way this burden was apportioned was to be changed?

All of these issues have potentially enormous implications for consumers. This is why Consumer and Corporate Affairs Canada is trying to keep abreast of today's changing marketplace by conducting a systematic review of the appropriateness of our consumer policy, legislation and programs. The Department is making a concerted effort to understand the climate facing Canadian consumers.

We are scrutinizing the impact of traditional government interventions targeted directly at consumers -- such things as safety measures, labelling information and product standards. But it is now very clear that this traditional limited approach is no longer adequate. Consumers' interests go for beyond simple protection.

We are therefore looking at marketplace policies that establish structural rules: policies on competition, environment, international trade, industrial development, transportation and agriculture. We are also looking at how broad government policies affect the capacity of consumers to function in the marketplace. The interests of consumers are reflected in the development of those policies.

New Approaches to Consumer Protection

No one would claim that these changes will be made easily. In Canada, as anywhere else, it will be a difficult task to formulate efficient new approaches to consumer protection. The goal of my government is to implement changes under the assumption that we wish to protect consumers effectively without jeopardizing economic competitiveness.

If governments wish to achieve this desired goal, several principles will have to frame any new approaches. First of all, governments should try to minimize any negative impacts which their consumer policies might have on the competitiveness of domestic businesses, in both national and international markets. After all, if any business is to be successful under the new economic order, it must be competitive.

Governments will also have to consider the costs of any programs, and the tax burden that they will represent to both constituents and businesses. In these times, which are universally characterized by shrinking budgetary resources, we will need to find new approaches and new ways to protect consumers effectively.

Around the world, our institutions are structured to reflect the values and meet the needs of a time that is rapidly sliding into history.

As Kenneth R. Hey pointed out in an interesting article in the January/February 1992 issue of Across The Board magazine: "Leaders in business and government need to restructure their institutions in terms of employer/employee relations, business/client relations, government/citizen relations and institutional relations to create a fit with the new consumer and citizen. That demands innovative thinking.

Redesigning and renovating are easy in an expanding environment, but are something else again in the midst of shrinking economic potential."

In the same ways that market economies are evolving, our consumer protection approaches are also undergoing profound changes. The two words that seem to best sum up the direction in which we need to go are responsibility and co-operation.

Obviously, governments are able to offer consumers some types of protection that they could not otherwise enjoy; for example, the testing and analyzing of products to set standards. But people are going to have to realize that government cannot solve all of their problems. They are going to have to take some responsibility into their own hands.

Among consumers, the old assumption was that "consumers are good, businesses are bad." Businesses have acknowledged their responsibility to provide quality products and services, together with reasonable choice and information, at attractive prices. Consumers should offer them the courtesy of shedding their old assumptions.

The marketplace is an integrated whole made up on elements that are not only interdependent, but which actually stimulate one another. Protective measures and well-informed consumers can help businesses by encouraging them to improve the quality of their products and services -- and thereby help increase a business's level of competitiveness in larger markets.

Clearly, there is a need for co-operation in developing coherent consumer policies, at both national and international levels. However, the formulation of appropriate mechanisms to embody this co-operation is only just beginning. The slowness of the process is not only due to its complexity, but also to the difficulty of establishing a new spirit of trust among partners, to whose mutual benefit it is to co-operate.

If business, governments and industry seek new roles based on shared responsibility and co-operation, then consultation and partnerships become very important. Consumers need to be heard. They should have the opportunity to participate in policy processes. Consumer and corporate affairs intends to make its review of consumer policies public, in order to have maximum public input about possible future directions.

Consumers no longer want to be told: "listen to us, we know what's best for you," and governments will have to adapt to that reality.

However, if nations are to move on to a new model for consumer relations and consumer protection, new approaches, solutions and ways of managing will have to be found. Before walking away from our old structures and models, we need to ensure that newer, better, solutions are in place.

For example, the term co-operation has to be something more than a new suit of clothes for the old passivity. Co-operation should be based upon mutual respect among equal partners, who listen to one another. It should not mean, "co-operate, and do as I tell you."

Within current realities, we need to "empower" consumers, and enable them to share in emerging partnerships with business and governments.

For all the changes in the marketplace, however, one thing will remain the same. Consumers will justifiably continue to expect a safe market, adequate choices, reasonable prices, and certain standards of market behavior.

An effective system of consumer policies and programs does not just assist and protect consumers -- it is an essential component in making the entire market system function fairly and efficiently to ensure prosperity. Given the importance of this underlying reality, I am confident that Canada and other nations will be able to forge effective partnerships, and meet the marketplace challenges of the next century.

Out-of-Pocket Home Care Expenditures for Noninstitutionalized Disabled Elderly

Marlene S. Stum, University of Minnesota, Twin Cities[1]
Jean W. Bauer, University of Minnesota, Twin Cities[2]
Paula J. Delaney, University of Minnesota, Twin Cities[3]

Levels and predictors of out-of-pocket home care expenditures for the disabled elderly were examined using a sample of paid home care users with out-of-pocket expenditures from the 1984 National Long Term Care Survey (N=859). Results of hierarchical multiple regression indicate need, specifically functional ability, is the most important predictor of out-of-pocket home care expenditures. Education, marital status, and population density while significant predictors, added relatively little to the total variance. Implications for prevention education, long term care policy, and research are discussed.

Dramatic changes in the age structure of the American population are challenging how we plan, provide, and pay for health care services for individuals over 65 years of age. Longer life expectancies and aging of the population in general suggest that the number of elderly with long term care needs are likely to increase dramatically. It is well documented that most elderly prefer to remain independent in their own home for as long as possible (Rowland & Lyons, 1991). Community-based noninstitutional long term care is increasingly viewed as the most appropriate alternative to enable an aging population to maintain their independence. The overall goal of long term care is to restore or maintain an individual's functioning (physical, psychological or social), at a maximum level rather than curing medical conditions (Katz, 1983). Paid home care is one approach to help individuals with routine and often repetitive tasks of daily living. Paid home care services can range from social services (homemaker/chore services, assistance with bathing and toileting) to more health related services (nursing and nurses aides, monitoring of medication).

There has been a great deal of research on health care expenditures for acute care (physician or hospital) and institutionalized long term care (nursing homes) but much less is know about the costs of maintaining elderly in the community through noninstitutionalized care (Feder, 1991; Rivlin & Wiener, 1988). Given the many gaps in current public and private health care programs, the functionally disabled elderly appear to be most at risk of incurring substantial out-of-pocket long term care expenses. Medicare, Medicaid and long term care insurance coverage of home health services is limited to situations in which skilled care is needed, primarily for postacute illnesses, rather than for the chronically ill. Such short-term, intermittent care for the homebound does not include the majority of long term care needs of the disabled elderly (Feder, 1991; Rivlin & Wiener, 1988).

Relatively few sources of data, beyond Medicare and Medicaid records, have been available to help understand the range of home care use, sources of financing, or out-of-pocket expenditures. A majority of expenditure data therefore has been for skilled care, such as nursing services, versus expenditures for assistance with the more routine tasks of daily living. As long term care policies on the provision and financing of services are debated and developed it seems essential to understand consumer home care expenditures. This study utilizes a nationally representative sample to gain further understanding of out-of-pocket expenditures for home care help with daily living activities of the disabled elderly. Questions regarding the level of out-of-pocket expenditures being incurred for a range of home care services, relationships between expenditures and characteristics of a diverse disabled elderly population, and major predictors of differences in out-of-pocket expenditures are addressed.

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[1] Assistant Professor, Family Social Science

[2] Associate Professor, Family Social Science

[3] Graduate Student, Family Social Science

Literature Review

Levels of Home Care Expenditures

In the only nationally representative study found of out-of-pocket home care expenditures Liu, Manton, and Liu's (1985) results suggest about half of the noninstitutionalized disabled elderly using some type of paid help experienced out-of-pocket payments. As has been found in other studies of health care expenditures (U.S. Health and Human Services, 1982), Liu et al. (1985) found a small percentage of individuals tend to account for the greatest proportion of expenditures.

Influences on Out-of-Pocket Expenditures

Household expenditures, including health care, depend on family income, prices of goods and services, and the needs or preferences in a household (Freidman, 1957). Income was found related to home care expenditures in several studies (Liu et al., 1985; U.S. Health and Human Services, 1982). Although money income is considered to be a major determinant of consumption, it is generally acknowledged that current annual income is an unsatisfactory measure of consumption among elderly (Moon, 1977). In addition to income, elderly may choose to draw upon accumulated wealth, including liquid and non-liquid assets, to cope with contingencies such as changes in health status.

A U.S. Department of Health and Human Services (1982) study of out-of-pocket expenditures for personal health services (physician, hospital, nursing home) found expenditures to vary by demographic and socioeconomic factors. Out-of-pocket expenditures were greater for individuals who were older, female, living in Standard Metropolitan Statistical Areas (SMSA), living in the Western U.S. Census Region, had higher educational levels, and higher incomes. Williams, Hagler, Martin, Pritchard & Bailey (1991) in a multivariate study of predictors of out-of-pocket medical expenditures for low-income households found income, type of insurance, number of ill family members, priority of medical expenses, and ethnicity to explain 13% of the variance in expenditures.

While Liu et al. (1985) did not conduct multivariate analyses, single relationships between individual characteristics and out-of-pocket expenditures for home care were examined. Significant predictors of out-of-pocket home care expenditures, in addition to income, included prior medical service use, age, marital status, and gender. Individuals who were older, without a spouse, and female were likely to have higher out-of-pocket expenditures. It was also found individuals with the highest number of functional health limitations had out-of-pocket expenses three times higher than the average out-of-pocket for all disabled persons which paid for care (Liu et al., 1985). Winter, Morris, Bivens, and Jakubczak (1989) found that becoming disabled increases both total medical outlays and out-of-pocket expenditures. Just as in younger populations, the type and level of health limitations impacting expenditures among individuals over 65 vary widely (Rowland & Lyons, 1991).

Two measures of the extent of functional limitations or physical disability, and, therefore, an indication of the need for long term care, include the Activities of Daily Living (ADL) scale (Katz, Ford, Moskowitz, Jackson, & Jaffe, 1963) and Instrumental Activities of Daily Living (IADL) scale (Duke University Center for the Study of Aging and Human Development, 1978). ADL's refer to the performance of basic daily living personal care tasks such as ability to dress, eat, and toilet. IADL's assess a person's ability to maintain a household independently, such as preparing meals, managing money, doing housework and laundry, and using the telephone.

Conceptual Framework

Existing research on out-of-pocket home care expenditures as well as research on health care expenditures overall, does not offer a specific conceptual framework to guide the selection of independent variables nor suggest how the variables may interact to influence out-of-pocket expenditures. This study attempts to contribute to the literature by using Andersen's (1968) original and Andersen and Newman's (1973) expanded behavioral model of health services utilization as a tool to conceptually organize many of the individual, or micro, factors which may influence out-of-pocket expenditures. Given the overall lack of third party coverage for help with daily living activities, it is assumed that factors which may influence use, will also influence out-of-pocket expenditures.

In Andersen and Newman's (1973) behavioral model, health service use is characterized as a function of characteristics of the population at risk, the resources of the health care system, and social determinants. In this study, and in most utilization research, only characteristics of the population at risk are focused upon to understand home care expenditures. In the Andersen model, population characteristics considered to influence use are comprised of predisposing, enabling, and need characteristics of the individual.

Predisposing characteristics are personal characteristics which exist prior to health needs and influence health services use including: a) demographic (age, gender, marital status), and b) social structural (education, race) aspects of an individual's life. Andersen's behavioral model assumes that even when one is predisposed to use health services, there must be some felt need as the basic stimulus for the use of health care services. Need has been measured by self-reports of health status, functional limitations, or perceived health levels. The enabling characteristics in the behavioral model reflect that while an individual may be predisposed or have a need to use health services, he or she will not be able to use health services without some "means," or resources, to do so. An individual's ability to use health services depends upon: a) family resources (income, health insurance, family member availability), and b) community resources (urban/rural character; geographic location; availability of care).

When Andersen and Newman's (1973) theoretical framework is utilized, out-of-pocket expenditures are conceptualized as the outcome of need for care interacting with a combination of enabling factors and predisposing characteristics of elderly individuals. This framework guides an examination of the following questions: 1) How diverse are levels of out-of-pocket home care expenditures for help with daily living activities? and 2) What combination of specific predisposing, need, and enabling resource variables best explain differences in out-of-pocket home care expenditures for help with daily living activities?

Methodology

Sample

Data used in this analysis is from the 1984 National Long Term Care Survey (NLTCS) conducted by the Bureau of the Census and sponsored by the Department of Health and Human Services. The 1984 NLTCS is the second-wave in a longitudinal survey of the personal characteristics and use of health-related services by non-institutionalized disabled elderly in the United States. The 1982 NLTCS sample was obtained by screening a random sample of approximately 36,000 Medicare enrollees to determine the presence of one or more limitations in activities of daily living (ADL's) or instrumental activities of daily living (IADL's) lasting 3 months or longer. The 1984 NLTCS community-dwelling sample (N=5934) consists of respondents from 1982 who were re-interviewed; individuals who had turned 65 by 1984, and individuals screened-out in 1982 but who now met the chronically disabled criteria. A sub-sample of 859 individuals who reported out-of-pocket expenditures as a result of using paid home care for help with ADL's or IADL's provided the sample for this study. Further methodological details concerning the 1982-1984 survey and sampling procedures have been described elsewhere (Macken, 1985; Manton, 1988).

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Table 1
Coding, Means and Standard Deviations for Independent and Dependent Variables

Variable	Mean	Standard Deviation	Coding Algorithm
DEPENDENT			
Out-of-pocket home care expenditures	173.42	389.98	Actual out-of-pocket expenditure in last month for help with IADL's/ADL's[1]
PREDISPOSING			
Age	79.06	7.57	Actual number of years
Gender	1.74	.44	1=Male, 2=Female
Marital Status	1.84	.64	1=Married, 2=Widow, 3=Divorced, separated, never married
Race	1.08	.28	1=White, 2=Other
Education	10.38	3.79	Actual number of years
NEED			
Functional Ability	.72	.27	Index based on weighted ADL's & IADL's 0-1 range with 1=highest functional ability
Perceived Health	2.72	.98	1=Excellent, 2=Good, 3=Fair, 4=Poor
Prior Nursing Home Use Ever	.16	.37	1=Yes, 0=No
Prior Hospital Use in past year	.39	.49	1=Yes, 0=No
Senior Center or Day Care Use	.07	.25	1=Yes, 0=No
Meals Program Use	.07	.25	1=Yes, 0=No
ENABLING			
Self			
Income	6.97	1.16	Natural log of monthly household income
Report Assets	.73	.44	1=Yes, 0=No
Home Equity[2]	3.99	4.74	Actual value
Family			
Size	1.65	.95	Actual number of household members
Helpers	.34	.71	Actual # of unpaid helpers
Unpaid Helper Days	.56	1.74	Actual # of unpaid helper days
Children	.82	1.14	Actual # of children within 60 minutes of traveling time
Community			1=Rural, 2=Urban
Population Density	1.45	.50	66=Northeast, 67=Northcentral, 68=South,
Census Region	67.46	1.02	69=West

[1] ADL's is for activities of daily living and IADL's for instrumental activities of daily living.

[2] Home value and mortgage were coded into identical categories. Home equity is the result of home value less mortgage value; renters were coded 0.

Operational Definitions

Table 1 displays definitions, coding, means and standard deviations for the independent and dependent variables used as operational indicators of the theoretical concepts in the Andersen and Newman (1973) behavioral model. An improved measure of functional limitation is utilized as one indicator of need. Instead of simply counting ADL's and IADL's, each specific activity is weighted according to difficulty and severity (IADL's low=1 to high=3; ADL's low=6 to high=8). A functional ability score ranging from 0 to 1 is computed for each individual. Alpha reliability coefficients for the functional ability index were well within acceptable ranges (alpha=.8397 (F=590.65, p <.001).

Analysis

Levels of expenditures and bi-variate relationships with predisposing, enabling and need variables were examined using Pearson correlations and comparisons of expenditures at selected percentiles. Hierarchical multiple regression was used to examine the combined predictive effects of the independent variables on out-of-pocket expenditures as well as the overall effect of each block of independent variables (predisposing, need, enabling). In this analysis, predisposing variables were entered on the first step to control for differences; all need variables on the second step as need should serve as the stimulus for health care use, and enabling variables which help meet needs were entered on the third and final step.

To assess for multicollinearity, each independent variable was regressed on all of the other independent variables. Variables with categorical measures were coded as dummy variables and one category was not entered into regression analysis for comparison groups. All variables contributing significantly ($p<.05$) to preliminary regression equations were combined in the final analysis.

Findings

Out-of-Pocket Home Care Expenditures

Disabled elderly reporting out-of-pocket expenditures for home care averaged monthly expenditures of $173. The highly skewed distribution of out-of-pocket expenditures is indicated by the fact that one-half made out-of-pocket payments of $32 per month or less, and 10% reported paying more than $496 per month. As expected, the average out-of-pocket monthly expenditures for home care increased as functional ability decreased. The average monthly out-of-pocket expenditures for individuals with the highest functional ability was $54 compared to $395 for individuals with the lowest functional ability. The skewness of out-of-pocket expenditures is further highlighted when a comparison of the distribution of out-of-pocket payers with the distribution of total out-of-pocket expenditures in a month by payment and limitation level. The subgroup of individuals who had the lowest functional ability and paid over $134 composed only 12.3% of the out-of-pocket payer population, but accounted for 54.3% of the total out-of-pocket payments.

Specific relationships between predisposing, need, enabling variables and out-of-pocket home care expenditures were examined using Pearson's correlations. Individuals with higher levels of out-of-pocket expenditures were significantly more likely to be older, other single, White, and more highly educated than their counterparts ($p<.05$). Two of the six need variables were also significantly related to expenditures. Individuals with higher functional ability levels and prior nursing home use were more likely to report higher levels of out-of-pocket expenditures ($p<.05$).

Levels of out-of-pocket home care expenditures were significantly related to the enabling variables of family income, assets, and home equity ($p<.05$). Individuals reporting payments of $15 or less per month had median monthly incomes of $564, 63% had assets, and the median home equity reported was $20,000. In comparison, individuals reporting payments of $135 or more had median monthly incomes of $1069, 80% had assets, and a reported median home equity of $50,000. Individuals reporting higher expenditure levels were more likely to have a larger household size, but a lower number of unpaid helpers. Out-of-pocket expenditures were also significantly related to population density, with individuals in urban areas more likely to have higher expenditures.

Multivariate Analysis of Out-of-Pocket Predictors

Table 2 contains the standardized regression coefficients for the significant variables in the final step of the hierarchical regression. The R^2 coefficients indicate the cumulative proportion of the variance explained by each block of the independent variables (Predisposing (P), Need (N), Enabling (E)). Overall, 19% of the variance in out-of-pocket home care expenditures was explained using predisposing, need, and enabling individual determinants of Andersen and Newman's (1973) behavioral model. The results suggest predisposing variables add relatively little explanation to the total variance (R^2 (P)=.02). Of the predisposing variables, education and marital status were the strongest predictors of expenditures. Disabled elderly with higher education levels and individuals who were divorced, separated or never married (other single) were more likely to have higher out-of-pocket expenditures,

Table 2

Final Standardized Regression and Hierarchical R^2 Coefficients for Predisposing, Need, and Enabling Variables

Independent Variables by Block	Standardized Beta
PREDISPOSING	
Education	.13***
Marital Status	
Widow	.06
Other Single	.09**
NEED	
Functional Ability	-.41***
ENABLING	
Population Density	.08**
Adjusted R^2	
(P) = .02***	
(P + N) = .18***	
(P + N + E) = .19***	

F(5,826)=39.696, N=832

**p<.01; ***p<.001

Need, specifically functional ability, is the most powerful predictor of out-of-pocket home care expenditures, increasing the Adjusted R^2 by .16 (R^2 (P+N)=.18). As previously illustrated, individuals with lower levels of functional ability are more likely to have higher out-of-pocket home care expenditures. Enabling variables also added relatively little (.01) to the total variance (R^2 (P+N+E)=.19). Of the resource variables, population density was the only significant predictor in relation to the other independent variables. Individuals living in urban areas were more likely to have higher out-of-pocket expenditures.

Conclusions

The results suggest that out-of-pocket home care expenditure patterns appear to be similar to other types of health care service expenditures with a small percent of individuals accounting for the greatest proportion of the total expenditures (Liu et al., 1985; U.S. Health and Human Services, 1982). Elderly individuals preparing for the possibility of functional limitations and the need for paid home care can expect to spend an average of $173 per month out-of-pocket in 1984 dollars. Given the skewness found in out-of-pocket expenditures, some individuals will pay much less and others are at risk for much higher expenditures.

Of the predisposing, need, and enabling variables the most powerful predictor of out-of-pocket home care expenditures appears to be need, specifically level of functional ability. The relative importance of need found in this study is consistent with other health care expenditure and home care use studies. Functional limitations appear to be the best predictors of home care need in comparison to perceived health or prior health use measures.

The results in this study add further support to the consistent absence of significant explanations by predisposing and enabling variables in relation to need. Other studies of home care use have found similar results with education, marital status, and population density as significant predictors, although such variables add little to the overall variance (Hanley & Wiener, 1990; Kemper, 1989; McAuley & Arling, 1984). It is suggested that education may affect an individual's ability to combine any knowledge of his or her resources with potential use of home care services to maximize his or her health status and independence. Population density is frequently included as a proxy measure of the availability of health care and to reflect differences in costs of care in urban and rural areas. Individuals in urban areas are more likely to have access to home health care and to pay higher costs for such care.

Andersen and Newman's model of health care utilization appears to have merit in predicting out-of-pocket home care expenditures. Total variance in home care use explained with the model in other studies have ranged from 10-23 percent, with 19% of the variance in out-of-pocket home care expenditures explained in this study. While the R^2 may not lead to predicting any one individual's expenditures, the model does help to understand the aggregate picture of out-of-pocket home care expenditures.

Implications

Improving our understanding of the levels and predictors of out-of-pocket home care expenditures for the chronically disabled elderly is important to assist in: a) appropriate prevention education of an aging population; b) long term care policy and planning; and c) developing appropriate theoretical models to understanding noninstitutionalized long term care service use and expenditures. Given the demographic trends in this country and the move to noninstitutional long term care, it seems critical that consumers begin to understand issues of long term care, including home care and sources of financing. While there has been considerable prevention education for consumers regarding acute health care risks, the costs of formal and institutional care, and sources of financing; consumers are much less familiar with chronic health care risks, non-institutional care options, and sources of financing. Consumers need to be aware of both acute and chronic health care risks and the potential financial implications for their family systems.

The results in this study of expenditures were consistent with others regarding home care use in finding that need, specifically functional limitations as a measure of health status, is the primary predictor. Therefore, it seems especially important to understand who is most likely to experience functional limitations, especially the more severe ADL problems. Consumers should be aware that the risk of functional limitations clearly increases with age (Doty, Liu, & Wiener, 1985). Functional limitation levels and severity for any person changes over time, and the direction of change can be toward improvement or toward decline (Liu & Cornelius, 1991).

In addition to understanding who is most at risk of functional limitations, it is also essential that consumers understand the possible costs of paid home care and potential sources of financing. Health care consumers must learn to make informed decisions regarding self-insuring against home care costs, with some combination of accumulated economic resources and social support. This study added insight into possible levels of out-of-pocket home care costs at one point in time. Given likely transitions in functional limitations, longitudinal studies are also needed to examine expenditures over time if consumers can adequately prepare.

Long term care policy issues continue to emerge as important social priorities at the federal, state, and local levels of government. Issues of access, equity, and sources of public and private insurance financing for home care must be addressed. Continual assessment of out-of-pocket home care expenditures should add insight into access and equity issues. Given the assumption that in an equitable health care system need drives use, the home care system would appear to be quite equitable. Policy and program development should be based on the understanding that need, not predisposing or enabling resources, appears to be the primary contributor to the explanation of use and expenditures. Such findings lend support to public and private policies and programs that use ADL disabilities for determining eligibility for home care services. As public and private home care financing options evolve, issues regarding eligibility criteria will continue to grow. Decisions on how "need" or functional limitations are assessed as well as the role of enabling resources are yet to be determined.

The results of this study also reinforce the need to continue to develop and expand the theoretical frameworks used in the examination of health care expenditures. In this study as in most others on home care use, only a subset of variables in Andersen's model were used as predictors. To date no research has included all dimensions of Andersen and Newman's model at the micro or macro level leaving the explanatory value of the full model unknown.

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The Implicit Prices of Long-Term Health Care Policy Characteristics

Michael L. Walden, North Carolina State University[1]
M. B. Hossain, North Carolina State University[2]

As long-term health care policies become a more important part of the health insurance market, state insurance regulators and others have become increasingly concerned about the provisions of such policies. Some states have taken the step of mandating provisions in long-term health care policies. This study shows there is a cost to such action. The study calculates the implicit prices of provisions of a sample of long-term health care policies.

Long-term health care policies have grown to become a significant part of the health insurance industry and a significant option for consumers. Long-term care policies are designed to pay for long-term care in a nursing home or at the policyholder's home. The growth of long-term health care policies has paralleled the relative growth of the elderly population and the professional long-term care industry. The market for long-term care policies is expected to grow in the future as the relative sizes of the over age 65 and over age 85 populations grow.

Long term health care policies vary in their characteristics and coverage. This variability has motivated some states to mandate types of coverage or to eliminate some restrictions in long-term care policies. For example, in 1989 North Carolina required that long-term care policies marketed in the state drop any requirements that the policyholder must first be hospitalized before long-term care benefits could begin.

But, of course, mandated coverage or limitations on restrictions aren't without cost. Mandated coverage and limitations on restrictions which in turn increase coverage will increase the price of the policy unless consumers place no value on the additional benefits and the additional benefits are costless to provide by the insurer.

It is important, therefore, for policymakers to consider the impact of mandated coverage and restriction limitations on the price of long-term health care coverage. Only then can policymakers weigh the relative benefits and costs of interference in the long term health care market. The objective of this study is to provide estimates of the implicit prices of long-term care policy characteristics for policies marketed in North Carolina.

The outline of the paper is as follows. The second section develops the background and theoretical model for the analysis of long-term care policy characteristics. The third section discusses the variables used in the analysis. The fourth section discusses the data, presents the empirical results, and provides interpretations. Conclusions and policy implications are offered in the last section.

Theoretical Model

The notion that a financial contract, such as an insurance policy, can be decomposed into its characteristics, and that implicit prices can be derived for the characteristics is in the tradition of hedonic price analysis developed by Lancaster [1966], Muth [1966], and Rosen [1974]. Hedonic price analysis recognizes that many products are composed of multiple attributes or characteristics. Consumers demand goods because of the characteristics they include. Goods that contain more of the characteristics preferred by consumers will be in greater demand and, consequently, will have higher prices. Conversely, goods that contain fewer characteristics preferred by consumers will be demanded less and will have lower prices. Characteristics that don't provide benefits to consumers will have no impact on the good's price.

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[1] Professor, Department of Agricultural and Resource Economics.

[2] Graduate Student and Research Assistant Department of Agricultural and Resource Economics.

The equilibrium price of the composite good is therefore a function of the equilibrium prices of the characteristics. The first level of hedonic price analysis decomposes the composite good into its characteristics and estimates the equilibrium prices of the characteristics.[1] The relationship to be estimated is:

$$P_i = \alpha_1 X_{i1} + \alpha_2 X_{i2} + \alpha_3 X_{i3} \qquad (1)$$

$$+ \ldots \alpha_n X_{in},$$

where P_i is the total price of composite good i, X_{i1}, X_{i2}, $X_{i3}, \ldots X_{in}$ are the levels of characteristics X_1, X_2, $X_3, \ldots X_n$ for composite good i, and α_1, α_2, α_3, $\ldots \alpha_n$ are the implicit prices per unit of characteristics X_1, X_2, $X_3, \ldots X_n$. A linear hedonic relationship is shown in equation (1) for illustrative purposed only; hedonic price equations need not be linear.

The hedonic price approach to analyzing good characteristics has most frequently been used in analyzing durable goods such as houses [Walden, 1990]. However, the approach has also been successfully applied to financial products. Most recently, Schiano calculated implicit prices of investment product characteristics [Schiano, 1987], and Walden calculated the implicit prices of whole life insurance policy characteristics [Walden, 1985].

This study uses the model specified in equation (1) to calculate the implicit prices (α's) of long-term care policy characteristics (X's).

Empirical Model

The dependent variable in the empirical analysis is the annual premium (P). The annual premium can be adjusted each year by the company for inflation. Determinants of P are discussed below.

Policyholders Age

Although the policyholder's age is not a policy characteristic, it does have a significant impact on the annual premium. The probabilities of the policyholder needing long-term care or of needing long-term care for a longer period of time are expected to increase with age.

The effects of three ages, 60, 70 and 80, on the annual premium are measured by two categorical variables, AGE70 and AGE80. AGE70 equals 1 if age of the policyholder is 70 years and AGE70 equals zero otherwise. AGE80 equals 1 if age of the policyholder is 80 years and AGE80 equals zero otherwise. The coefficients on AGE70 and AGE80 measure the change in the annual premium from the premium when the policyholder's age is 60. The coefficients on both AGE70 and AGE80 should be positive, with the coefficient on AGE80 greater than the coefficient on AGE70.

Benefit

Benefit (BENEFIT) is the monthly payment paid by the insurer to the policyholder for intensive or intermediate care, for home care, or for hospice care BENEFIT is adjusted ech year for inflation. Since this benefit is a potential return to policyholders, policyholders are expected to prefer policies with a higher amount of benefits and to bid more for such policies. Higher benefits are also, of course, more costly to the insurance company.

Policies used in the study gave separate monthly benefit payments for intensive and intermediate care and for home and hospice care. However, the benefit for home and hospice care was found to be proportional to the benefit for intensive and intermediate care. Therefore, only the benefit for intensive and intermediate care is measured by BENEFIT. The coefficient on BENEFIT is expected to be positive.

Prior Hospitalization

A controversial provision in some long-term care policies is the requirement that the policyholder be hospitalized prior to long-term care for long-term care benefits to be received. The presence or absence of the prior hospitalization provision is measured by the categorical variable NOPRIOR, where NOPRIOR equals 1 if the prior hospitalization provision is absent and 0 if the prior hospitalization provision is present. Since the absence of the prior hospitalization provision is likely to increase the use of long-term care policies by policyholders and to increase the cost to the insurer, the coefficient of NOPRIOR should be positive.

Elimination Period

The elimination period refers to the number of days a policyholder must be in residence at a nursing home before policy benefits begin. For example, a 30-day elimination period means a policy will begin paying benefits on the 31st day. Shorter elimination periods are obviously more beneficial to policyholders and more costly to insurers.

Although elimination periods can be any number of days, elimination periods in this study's sample of policies were either 0, 30, or 60 days. The elimination period provision was therefore represented by two categorical variables, ELIMPD30 and ELIMPD60. ELIMPD30 is 1 if the elimination period is 30 days and 0 otherwise. ELIMPD60 is 1 if the elimination period is 60 days and 0 otherwise. The coefficients on ELIMPD30 and ELIMPD60 measure the change in the annual premium from the premium when the elimination period is 0 days. The coefficients on ELIMPD30 and ELIMPD60 are expected to be negative, and the coefficient on ELIMPD60 is expected to be greater, in absolute value, than the coefficient on ELIMPD30.

Benefit Period

The benefit period is the maximum length of time (in months) that benefits will be paid to the policyholder for each period of stay in a long-term care facility. Policyholders prefer longer benefit periods, and longer benefit periods are more expensive to insurers; therefore premiums should be higher for policies with longer benefit periods.

In the study's sample of policies three benefit periods were present, 24 months, 48 months, and 96 months. These benefit periods are represented by two categorical variables. BENPD48 is 1 if the benefit period is 48 months and is 0 otherwise. BENPD96 is 1 if the benefit period is 96 months and is 0 otherwise. The coefficients on BENPD48 and BENPD96, therefore, measure the change in the annual premium from the premium when the benefit period is 24 months. The coefficients on BENPD48 and BENPD96 should both be positive, and the coefficient on BENPD96 should exceed the coefficient of BENPD48.

Gap Between Two Periods of Stay

The gap between two periods of stay (GAP) is the minimum amount of time, in days, that must elapse between consecutive stays in a long-term care facility for benefits to be paid. Consumers prefer smaller gaps, but smaller gaps increase the expected payout by the insurer. Therefore, the coefficient on GAP should be negative.

Examination Period

The examination period (EXAMPD) is the number of days that the insurer allows the consumer to examine the policy before making a decision about purchasing it. During this period the consumer has the right to refuse the policy without any cost. A longer period of examination allows more flexibility to the consumer; therefore the consumer is expected to bid more for policies with longer examination periods. Similarly, if it takes an insurance agent a longer period of time, on average, to sell a policy with a longer examination period, then selling such policies will be more costly to the insurance company. Therefore, the coefficient on EXAMPD should be positive.

The empirical model can therefore be summarized as follows:

$$\begin{gathered} \mathbf{P=f(\overset{+}{AGE70},\overset{+}{AGE80},\overset{+}{BENEFIT},} \\ \mathbf{\overset{+}{NOPRIOR},} \\ \mathbf{\overset{-}{ELIMPD30},\overset{-}{ELIMPD60},\overset{+}{BENPD48},} \\ \mathbf{\overset{+}{BENPD96},\ \overset{-}{GAP},\ \overset{+}{EXAMPD}).} \end{gathered} \tag{2}$$

The hypothesized sign of the coefficient for each variable is given above the variable.

The study does not consider the impact of company characteristics on price. If company characteristics do influence policy price, then the true model is:

$$P=f(X_1,X_2,), \tag{3}$$

where X_1 represents policy provisions and X_2 represents company characteristics. The omission of X_2 from the model may bias the parameter estimate for X_1. To gauge the size of this bias, let b_1 and b_2 be the true parameters of X_1 and X_2, and let $\hat{b}_1$ be the parameter estimate of the mispecified model. The bias in estimating b_1 is:

$$\text{Bias} = E(\hat{b}_1)-b_1 =$$

$$(X_1'X_1)X_1'X_2\ b_2. \tag{4}$$

Equation (4) shows that the bias is proportional to the magnitude of b_2. The smaller the coefficients of the omitted company characteristics, the smaller the implied bias. The bias is also smaller the smaller the correlation between included and excluded variables, as measured by $X_1'\ X_2$. The specification error vanishes in the limit as $X_1'X_2$ approaches zero. Walden's study of whole life insurance policy characteristics [1985] found low correlations between policy characteristics and company characteristics. We expect the same to be true of long-term care policies. Therefore, the bias in the parameter estimates of the policy characteristics due to omitting company characteristics should be small.

Data and Results

Data for this study were taken from 15 insurers marketing long-term care policies in North Carolina between 1985 and 1990. Each insurer offered several combinations of provisions (including age of the insured) and a premium associated with each set of provisions. We call each provision set and associated premium a policy. There are 130 policies used in the study.

Table 1 gives descriptive statistics for the policies. The mean annual premium is \$177.73, but there's a considerable range about this mean, with the minimum annual premium being \$13.20 and the maximum annual premium being \$1129.00. There's a similar range about the mean monthly benefit of \$235.86. Means for the categorical variables are the percentage of policies in the study with that characteristic. For example, the mean value of 0.615 for NOPRIOR indicates that 61.5 percent of the policies had no prior hospitalization requirement. Table 2 gives correlation coefficients for the independent variables. The correlation coefficients are all relatively low.

Equation (2) is estimated with ordinary least squares regression analysis. The equation is estimated with the variables in linear functional form. Other functional forms were estimated, but the results were not significantly different or improved. The results for the OLS estimation are given in Table 3.[2]

In general, the results conform very well to the hypotheses presented in the previous section. The model explains a substantial amount (70 percent) of the variation in long-term care premiums. All of the explanatory variables have the correct sign, and eight of the 10 explanatory variables (excluding the intercept) are statistically significant at the 0.10 level or better.

Table 1
DESCRIPTIVE STATISTICS

Variables	Mean Value	Standard Deviation	Minimum Value	Maximum Value
Premium (P) in (\$)	177.73	183.91	13.20	1129.0
AGE70 (1=AGE70; 0=otherwise)	0.33	0.47	0.0	1.0
AGE80 (1=AGE80; 0=otherwise)	0.32	0.469	0.0	1.0
BENEFIT (\$)	235.86	168.65	100.0	1500.0
NOPRIOR (1 if no prior hospitalization required; 0 otherwise)	0.615	0.488	0.0	1.0
ELIMPD30 (1 if elimination period is 60 days; 0 otherwise)	0.276	0.449	0.0	1.0
ELIMPD60 (1 if elimination period is 60 days; 0 otherwise)	0.185	0.389	0.0	1.0
BENDP48 (1 if benefit period is 48 months; 0 otherwise)	0.315	0.466	0.0	1.0
BENDP96 (1 if benefit period is 96 months, 0 otherwise)	0.177	0.383	0.0	1.0
GAP (days)	93.69	61.72	90.0	180.0
EXAMPD (days)	20.0	6.33	10.0	30.0

Table 2
SIMPLE COORELATION COEFFICIENTS BETWEEN THE INDEPENDENT VARIABLES IN THE ANALYSIS

	AGE70	AGE80	BENEFIT	NOPRIOR	ELIMPD30	ELIMPD60	BENPD48	BENPD96	GAP	EXAMPD
AGE70	1.00	0.50	0.10	0.01	0.06	0.04	-0.05	-0.02	-0.01	0.06
AGE80		1.00	0.09	0.01	0.04	0.04	-0.02	-0.01	-0.01	0.05
BENEFIT			1.00	0.01	0.04	0.23	-0.06	0.16	-0.19	0.03
NOPRIOR				1.00	0.00	0.09	0.02	0.07	0.20	-0.40
ELIMPD30					1.00	0.36	-0.01	-0.06	0.26	-0.23
ELIMPD60						1.00	0.03	-0.02	0.16	-0.22
BENPD48							1.00	0.36	0.12	-0.27
BENPD96								1.00	0.10	-0.19
GAP									1.00	-0.35
EXAMPD										1.00

The estimated coefficients of the policyholder age variables (AGE70 and AGE80) are positive and statistically significant, as expected, and the coefficient for AGE80 is greater than the coefficient for AGE70, as was hypothesized. This means that older policyholders, all other things equal, pay a higher premium. The parameter estimates indicate that a policyholder who is age 70 pays $84 more annually than a policyholder who is age 60, and a policyholder who is age 80 pays almost $256 more annually than a policyholder who is age 60.

The coefficient on the BENEFIT variable indicates that the annual premium increases by 70 cents for every increase of $1 in the monthly benefit. The absence of a provision restricting payment of benefits only to cases where the policyholder has been hospitalized prior to long-term care (NOPRIOR) increases the annual premium by almost $38. This is 21 percent of the mean annual premium (from Table 1)

As discussed earlier, elimination periods are like deductibles because the policyholder must directly pay the costs of long-term care during the elimination period. Longer elimination periods should therefore be associated with lower premiums. The results support this hypothesis. The parameter estimates for both ELIMPD30 and ELIMPD60 are negative, although only the coefficient for ELIMPD60 is statistically significant. Also, the parameter estimate for ELIMPD60 is greater in absolute value than the parameter estimate for ELIMPD30, as hypothesized. The parameter estimate for ELIMP60 indicates that policies with a 60-day elimination period have an annual premium which is $46 lower than policies with a 0 day elimination period.

Table 3
OLS REGRESSION RESULTS FOR LONG-TERM CARE POLICY ANALYSIS

Dependent variable = P (annual premium in dollars).

Explanatory Variable	Parameter Estimate	t Statistic	Variable Label
Intercept	-187.914	-4.069***	
AGE70	84.079	3.847***	1 if age is 70, 0 otherwise.
AGE80	255.833	11.622***	1 if age is 80, 0 otherwise.
BENEFIT	0.704	12.087***	Monthly benefit in dollars.
NOPRIOR	38.118	1.953**	1 if no prior hospitalization required, 0 if prior hospitalization required.
ELIMPD30	-26.390	-1.196	1 if elimination period is 30 days, 0 otherwise.
ELIMPD60	-46.037	-1.850*	1 if elimination period is 60 days, 0 otherwise.
BENPD48	44.507	2.116**	1 if maximum benefit period is 48 months, 0 otherwise.
BENPD96	44.143	1.783*	1 if maximum benefit period is 96 months, 0 otherwise.
GAP	-0.147	-0.083	Minimum gap between two periods of stay.
EXAMPD	2.986	1.787*	Examination period in days.

R^2=0.72
$\bar{R}^2$=0.70
Number of observations = 130
*** significant at the .01 level
** significant at the .05 level
* significant at the .10 level

The parameter estimates for both benefit period variables, BENPD48 and BENPD96, are positive as expected and statistically significant. However, the parameter estimate for BENPD96 is essentially the same as the parameter estimate for BENPD48. The results suggest that policies with 48 or 96-month benefit periods have annual premiums which are $44 more expensive than policies with a 24-month benefit period.

The parameter estimate for GAP, the maximum gap in days between two periods of stay, is negative as expected but not statistically significant. However, the fact that the mean value of GAP is very close to its minimum value (Table 1) indicates little variation in GAP among the study's sample of policies. The parameter estimate for EXAMPD, the number of days the consumer is allowed to examine the policy before making a decision, is positive as expected and statistically significant. Annual premiums are almost $3 higher for every additional day in the examination period.

Summary and Conclusion

This study has demonstrated that provisions of long-term care policies have a significant impact on the price (premium) of those policies. Using a sample of long-term care policies marketed in North Carolina between 1985 and 1990, this study was able to statistically "explain" 70 percent of the variation in price of the policies by policy provisions. In particular, policies marketed to older consumers, policies with larger benefits, policies with no prior hospitalization requirement, policies with shorter elimination periods, policies with longer benefit periods, and policies with longer examination periods, were found to be more costly.

These results have important implications for state insurance regulators. The results indicate that state regulations mandating certain provisions or levels of benefits of long-term care policies will not be without cost to the consumer. For example, if state regulators require that all policies have a "no prior hospitalization" provision, then prices of policies required to add that provision will rise. Such price increases would reduce the affordability of long-term care policies.

State regulators should, therefore, take these price effects into account when considering mandating provisions. This raises the question of why mandating provisions is considered by state regulators if consumers can freely consider policies with alternative characteristics in the marketplace. Rather than mandating provisions, an alternative role for state insurance regulators would be to concentrate on two efforts. First, state regulators could ensure that policies with alternative combinations of policy provisions (or characteristics) are available in the marketplace. Second, state regulators could ensure that policies and policy provisions are written in a clear and understandable way that enables the consumer to easily compare policies and prices.

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Endnotes

1. The second level of hedonic price analysis estimtes the bid prices by purchases and the offer prices by suppliers for good characteristics. This analysis requires information on features of both purchasers and suppliers in different markets. This second stage of hedonic analysis is not pursued in this paper.

2. Since the policies were offered in various years between 1985 and 1990, we also tested if the annual premium was sensitive to the year the policy was offered by including year categorical variables in equation (2). The coefficients for the year categorical variables were not statistically significant and the coefficients for the other variables did not change. These results probably reflect the fact that the annual premiums could be adjusted for inflation.

Drugs, Money and Elder Abuse

Karen F. Stein, University of Delaware[1]
John E. Kushman, University of Delaware[2]

Financial exploitation is one form of elder abuse. Using data from 1,108 cases of elder abuse, a logit model was developed to address the following. What factors are associated with the probability that financial exploitation will be alleged in an elder abuse complaint? Given that an allegation of financial exploitation is made, what factors are associated with the probability that an investigation will confirm the allegation? Substance abuse was a significant factor in both cases.

Introduction

Financial exploitation, the unauthorized and/or improper use of funds, property, or any resources of an elderly person, is one type of elder abuse. Most states have legal authority, usually resting within an Adult Protective Services (APS) agency, to investigate complaints of elder abuse. These agencies operate voluntary or mandatory reporting systems that respond to allegations, and administer treatment and prevention programs. When a report of alleged financial exploitation is received, for example, the agency opens a case file and proceeds with an investigation. The results of the investigation may indicate that there is no basis for the allegation, that the allegation has been substantiated, or that the specific allegation cannot be confirmed, but the alleged victim is found to be at-risk for maltreatment in the immediate future. In the latter two cases, the agency can choose among interventions, with the cooperation and permission of the victim. These interventions can include legal proceedings against the perpetrator, removing the victim from the exploitative situation, providing in-home services and/or financial aid to reduce the dependence of the victim upon the perpetrator, and conducting stress reduction programs for the perpetrator.

The National Aging Resource Center on Elder Abuse estimates that of approximately 2 million reported incidents of elder maltreatment in 1988, there were 400,000 substantiated cases of financial exploitation of the elderly. In almost all cases, the perpetrators were either family, friends, caregivers or acquaintances of the victim (Tatara, 1990).

In times of decreasing resources for state social welfare services, more accurate modeling of victim and perpetrator profiles can assist APS in effectively identifying the at-risk population, and improve the efficiency of both their investigation and intervention programs. Victim and perpetrator profiles have been extensively explored in the elder abuse literature. Early studies (Block and Sinnott, 1979; Lau and Kosberg, 1979; Giordano and Giordano, 1984; Hwalek, Sengstock and Lawrence, 1984) identified the typical victim as an older woman--usually in her 70s--dependent upon the perpetrator for care, and socially isolated. Stress was the most mentioned cause of abusive behavior. Perpetrators were seen as caregivers with good intentions, but whose feelings of burden and aloneness erupted in dysfunctional behaviors.

More recent studies (Kosberg, 1988; Godkin, Wolf, and Pillemer, 1989; Wolf, Godkin and Pillemer, 1986; Anetzberger, 1989; Pillemer and Finkelhor, 1989) expanded the list of victim characteristics to also include poor physical health, poor emotional health, mental impairments, low-income, and alcohol abuse. Emotional distress, mental illness and substance abuse were found to have a stronger association with perpetrator characteristics than caregiver stress. Only two studies (Wolf, et al., 1986; Pillemer and Finkelhor, 1989) determined factors that would differentiate among various types of elder maltreatment. Victims of financial exploitation tended to be single, had few support networks, and had problems with financial management. Perpetrators of this type of abuse did not live with the victim, had problems with alcohol, and had long-term financial problems.

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[1] Associate Professor, Textiles, Design and Consumer Economics

[2] Professor, Textiles, Design and Consumer Economics

Unfortunately, most of these previous studies suffer from methodological and conceptual limitations, many of which are acknowledged in the studies. The hypotheses in these studies centered on the causal influence of various risk factors for abuse and neglect. However, the statistical techniques were bivariate, using chi-square or correlation analysis to investigate the hypotheses. These techniques did not separate associations with different risk factors. Few of the samples had more than 50 observations.

It would seem that more accurate associations between type of abuse, or outcomes of investigations, and victim/perpetrator characteristics could be drawn using a logit model. The logit model applies when a process has qualitative outcomes — that is types of outcomes like physical abuse versus financial exploitation, or results of investigations, like allegation substantiated versus allegation not substantiated — rather than amounts of outcomes.

Objectives

This study addresses the following questions:

(1) Given there is at least one allegation of abuse and/or neglect made to adult protective services, what factors are associated with the probability that the allegation will be one of financial exploitation?

(2) Given that an allegation of financial exploitation is made, what factors are associated with the probability that an adult protective services investigation will have an adverse finding?

There are no comparable studies in the literature that address these questions. Nor are there comparable studies that use logit analysis or samples as large as in this study. The characteristics that make this study unique also make it very exploratory. This should be the first of many studies. As such, the analysis is deliberately biased toward leaving possible influences open to further study.

Methodology

Source of the Data and Sample

Adult Protective Services (APS) of the State of Delaware Division of Aging has a database consisting of environmental, psychosocial, physiological and health behaviors assessments of their clients. This, in combination with its monthly report forms and summary sheets, are the sources of data. Since 1984, Delaware APS has collected information from over 3,000 cases, categorizing allegations as complaints of physical abuse, neglect, sexual abuse, financial exploitation, psychological abuse, inadequate self care, and/or disruptive behavior. There are many cases of multiple allegations.

The sample comprises Delaware APS case records from 1986 to 1990. A case record has an allegation of at least one type of problem involving an adult protective services investigation. The sample was restricted to those cases in which the client's age and living arrangements were identified in the case file, and the database was reasonably complete. There were 1,108 cases included in the sample.

This study includes only clients 60 years old or older at the time the case record was opened, living outside an institutional or quasi-institutional setting. There were a total of 774 cases that met these requirements. Of these cases, 76 included allegations of financial exploitation.

The ages of all alleged victims ranged from 60 to 103. Alleged victims of financial exploitation ranged in age from 62 to 96. The mean age for both groups was 77.2 years. Compared to all alleged victims, fewer of the alleged victims of financial exploitation were married, more lived with non-relatives, and more were Black. On the whole, however, both groups shared similar demographic characteristics. See Table 1 for descriptive information.

Table 1

Characteristics of Alleged Victims of Elder Maltreatment, in Percent

	ALL ALLEGED VITCIMS	ALLEGED VICTIMS OF FINANCIAL EX-PLOITATION
Sex		
Male	28.6	31.6
Female	71.0	68.4
Race		
White	69.4	58.2
Black	28.1	36.7
Living Arrangement		
Lives Alone	40.0	38.0
Lives w/Relative	50.6	44.3
Lives w/Non-Rel.	9.4	17.7
Marital Status		
Married	18.2	11.4
Widowed	58.1	60.8
Other (specified)	29.1	22.8
Age		
60-69	22.0	19.0
70-79	35.2	41.8
80-89	34.6	35.9
90-99	7.9	3.8
100+	.3	0.0

Levels of Analysis

The study examined factors associated with financial exploitation at two levels. These levels correspond to information in the APS case files.

The first level. The first level of analysis used the entire sample of APS cases (N=774). The question analyzed was:

> Given there is at least one allegation, what factors are associated with the probability an allegation of financial exploitation is made?

Whether or not the allegation is financial exploitation has a "Yes" or "No" answer, so the dependent variable in the analysis is binary.

The second level. The second level addresses the question:

> Given that an allegation of financial exploitation is made, what factors are associated with the probability the APS investigation will have an adverse finding?

Adverse findings include substantiating financial exploitation (confirming that the alleged events actually occurred), or not substantiating the allegation but finding the client to be at risk for exploitation. The alternative to an adverse finding is no evidence of exploitation or risk of exploitation. The sample for level two is 76 observations.

The meaning of adverse findings. On one hand, the analyst can take the question of whether the APS investigation had an adverse finding as a "Yes" or "No" question. "Yes" would include substantiation or at risk. Either of these is adverse compared to the alternative — not substantiated and not found at risk. The analysis was done with this binary interpretation of the dependent variable, using binary logit.

On the other hand, the analyst can treat the investigation outcomes as being ordered. No substantiation and not at risk is not adverse. At risk is adverse. Substantiation is most adverse. The situation has gone beyond risky to actual abuse or neglect. In this interpretation, there are three possible outcomes, each more adverse than the last. The analysis also was done with this ordered format for the dependent variable, using ordered logit.

The choice between binary or ordered logit depends on what the analyst is willing to assume about the quality of the outcome data and the interpretation of "at risk" versus "substantiated." The ordered analysis relies on clear, consistent differentiation between the adverse categories by the APS investigator. Situations judged at risk must be less severe than those substantiated. The distinction has to be consistent among APS investigators and among cases for any investigator. These conditions are untested, and probably hard to test. The ordered analysis is necessarily tentative, since it assumes the dependent variable distinguishes degrees of severity. It is possible the difference between a situation at risk and one with substantiated abuse or neglect is random timing of the investigation's start. Investigations started before a situation substantially deteriorates may lead to an assessment of risk. Those started later may lead to substantiation. When the investigation starts may be mostly random. In this case, it would be more appropriate to treat the outcome as binary, ie. adverse or not adverse. The difference between adverse categories would be random.

There is no information in the literature or in the

APS files on when investigations start relative to some threshold of behavior. Such information is impossible, since it presumes knowledge of behavior prior to a complaint or investigation. Likewise, there is no information on consistency of procedure or assessment of client situations for a single investigator or across investigators. A priori there is no basis for preferring the binary or ordered logit.

Explanatory Variables

Over 100 variables were coded from each case file. With this many, selection of variables to be used in the logit equations had to be careful. Because the questions investigated in this study have not previously been addressed, there is no exact body of literature. For guidance, we turned to a body of related literature, previously cited in this paper, that does examine victim profiles and risk factors for maltreatment, based upon case worker files. This is the available literature that comes closest to this research. Generally, there is strong agreement of results among these studies. As a beginning point, we included those variables that most often identify, through APS files, elderly victims of maltreatment (age, female gender, strength of family system, client's mental health, client's physical health, substance abuse, and low-income).

There are several instances where the data are most naturally categorical. For instance, the APS client's family system can be categorized as problematic, neutral or supportive. Ideally, this information would be captured using dummy variables for categories. Working against this format, however, is the large number of variables created with an accompanying loss of degrees of freedom, increasing model complexity, increasing sparseness of cells, and lower power of a test of a null hypothesis of no association. For several types of data in this study, a single variable was used with equal increments between categories. For instance, family system was scored zero for problematic, one for neutral and two for supportive. The single variable with equal increments implies that differences between categories are equally salient for the outcome. This implication probably does not hold exactly. The analysis used the single variable for brevity and ease of interpretation and for fewer variables in the smaller sample at the second level of analysis. If sample size permitted, a full dummy variable specification would be preferred for its flexibility.

Some combination of the following variables are used in each logit equation. A rationale for inclusion is given for the two variables (Southern and Nonwhite) not previously identified from the literature.

Southern- a dummy variable that equals zero if the case file is from the northern county of Delaware. The northern county has a relatively dense population and includes the primary administrative APS office. The variable equals one for the other two, southern counties of the state, which are less densely populated, more rural, has fewer available social services, and includes an APS office that is much smaller and less closely supervised. This variable may represent effects of population density, transportation access and APS behavior on reporting and outcomes.

Age- age of the APS client.

Female- a dummy variable that equals one if the client is female and zero if the client is male.

Nonwhite- a dummy variable that equals one if the APS investigator listed the client as any classification other than Caucasian. A finer classification would have given few observations in the specific nonwhite categories. Previous studies (Bell, Schmidt, and Miller, 1981) have found that non-white elderly, compared to white elderly, are more likely to be judged incapable of handling their own financial affairs in conservatorship legal proceedings. This variable may represent effects of susceptibility to financial exploitation and APS behavior on reporting and outcomes.

Family System- This variable gives a three-level assessment of functioning in the client's family. A value of zero means the APS file showed a problem in the family system. A value of one was neutral, and the value two represents a positive statement by the APS investigator. This variable relates directly with the assessed strength of family support for the client.

Client Mental Health- This variable relates inversely to an assessment of the client's mental health. The values are zero if there is no indication of a mental health problem and one if there is mention of a problem.

Client Physical Health- This variable relates directly with the client's physical health as documented in the APS file. The values are 0=file shows major physical impairment of the client, 1=file shows a minor impairment and 2=file shows no physical impairment of the client.

Number of Substance Abuses- The total number of drug or alcohol abuses mentioned in the APS file for the client, the alleged perpetrator and any other significant people. The minimum value is zero, for no abuses. The maximum value is six for abuse of both types of substances by the client, the alleged perpetrator and another significant individual.

Client Substance Abuse- This variable and the following one separate substance abuse by the client from substance abuse by someone in the client's environment. This variable has value zero if the APS file makes no mention of substance abuse by the client. If the file mentions substance abuse (drugs or alcohol) by the client, this variable takes a value of one.

Substance Abuse by Others- This variable relates directly to substance abuse by people in the client's environment. The values are: 0=no mention of substance abuse by the alleged perpetrator or any other significant individual and 1=abuse of at least one substance by at least one individual, not the client.

Low Income- This variable takes the value one to identify client households where income is below the official poverty line or where the APS investigator indicates a problem with finances or both. For client households where neither indicator of low income pertains, the variable has a value of zero.

Results

In an exploratory study like this one, concluding that an association is statistically significant will lead only to further study. There is little problem from erroneously concluding an association is significant. Such an error will only lead to some effort being spent to find the association is not what it seemed. However, overlooking an association that is significant could lead future research, policy and program development also to overlook that association. This is a more serious error.

Deciding what level of statistical significance to use means balancing the consequences of the two possible errors (Wonnacott and Wonnacott, 1972; Blake, 1979). It is important at this stage not to rule out associations that show potential. A liberal significance level of 20 percent (two-tailed test) is used to identify statistically significant results. The tables also indicate significance at a more conventional 5% and 10% (two-tailed test). Readers who adhere to more conventional significance levels can disregard the coefficients that are not significant at 10%. Other readers may wish to consider, as we did, the consequences of dismissing a true association on the basis of one exploratory study versus the consequences of including a hypothesis in other studies that turns out to be false[1].

Allegations of Financial Exploitation: First Level of Analysis

Table 2 gives the results for the first level of analysis concerning financial exploitation. The question addressed in Table 2 is, "Given there are one or more allegations, what factors are associated with the probability there will be an allegation of financial exploitation?"

The variables listed down the first column are selected as candidates for explaining the probability of alleged financial exploitation. The variables included in the two equations described in columns two and three are the same with the following exception. The equation represented in the second column contains only one substance abuse variable (the number of substance abuses in the client's environment). The equation in the third column omits that variable, and includes two other substance abuse variables that identify the substance abuser (substance abuse by the client and substance abuse by others in the client's environment).

The first statistical question is whether there is evidence that an association exists between the probability of an allegation and the collection of explanatory variables, taken as a whole.

The significance level of both equations at the bottom of Table 2 is essentially zero. There is virtually no probability the coefficient estimates would arise from a population in which all the "true" coefficients were zero. Overall, the relationships are statistically significant.

For coefficients of individual variables, tests of significance are made with a two-sided t-statistic. The significance level gives the probability that a coefficient estimate as far from zero as the one reported would happen when the true coefficient is zero. The results of both equations are similar. Considering the variables included in both equations, complaints of financial exploitation are more likely if the potential clients are non-white, have mental health problems, are in better physical health, and live in low-income households. Geographic location, age of the client, sex of the client and strength of the family system demonstrate no statistical significance in either equation.

All three substance abuse variables are significant. Substance abuse in the client's environment, included in the equation in column two, increases the likelihood of an allegation of financial exploitation. When the substance abusers are identified, in the third column, substance abuse by others shows a much stronger level of significance than does substance abuse by the client.

Investigation Outcomes: Second Level of Analysis

Significant factors for whether a type of complaint is brought are not necessarily significant in whether the APS investigation has an adverse outcome; ie. the complaint is substantiated ,or the complaint is not bully substantiated but the client is found to be at risk. Table 3 is at ther second level of analysis and the second level of sample. There are 76 observations in the sample for Table 3, corresponding to the number of APS cases in which there was an allegation of financial exploitation. The questions addressed in these estimates is, "Given an allegation of financial exploitation is made, what factors are associated with the probability the APS investigation will have an adverse finding?" It is likely to be more difficult to find significant results at this level of analysis, inasmuch as investigation results are subject to many influences that may not be measurable or systematic to the analyst.

Columns 2 and 3 use binary analysis, treating the findings of the investigation as adverse or not. For an adverse finding, the complaint is substantiated or the client is found to be "at-risk." Column 2 uses the single variable for substance abuse. Column 3 differentiates between the clinet's near environment.

Columns 4 and 5 use ordered logit, discriminating among 0=no adverse finding, 1=at risk but allegation unsubstantiated and 2= allegation substantiated. Column 4 uses a single variable for the total of all substance abuses. The equation in column 5 has separate variables for substance abuse by the client and substance abuse by another individual close to the client.

Table 2
Multivariate Logit Analysis of Factors Associated with Probability of Alleged Financial Exploitation: Binary Analysis (N=774)

	Equation with Single Substance Abuse Variable	Equation with Separate Substance Abuse Variables
Independent Variable	Coefficient (t-ratio)	Coefficient (t-ratio)
Constant	-4.192***	-4.372***
	(-3.589)	(-3.640)
Southern	0.094	0.094
	(.919)	(.903)
Age	0.010	0.012
	(.757)	(.865)
Female	-0.018	-0.007
	(-.124)	(-.044)
Nonwhite	0.583***	0.563***
	(2.327)	(2.239)
Family System	0.066	0.070
	(.279)	(.295)
Client Mental Health	0.598***	0.584***
	(2.467)	(2.395)
Client Physical Health	0.361***	0.364***
	(2.298)	(2.314)
# Substance Abuses	0.249***	
	(1.976)	
Client Substance Abuse		0.423*
		(1.302)
Substance Abuse-Others		0.547**
		(1.737)
Low Income	0.426**	0.410**
	(1.713)	(1.646)
Significance level-model	0.002***	0.002***

*** Significant at .05 level or less
** Significant at .10 level
* Significant at .20 level

TABLE NUMBER 3
Multivariate Logit Analysis of Factors Associated with Probability of Adverse Outcome in Case of Alleged Financial Exploitation (N=76)

	Binary Analysis		Ordered Analysis	
	Equation with:		Equation with:	
	Single Substance Abuse Variable	Separate Substance Abuse Variables	Single Substance Abuse Variable	Separate Substance Abuse Variables
Independent Variables	Coefficient (t-ratio)	Coefficient (t-ratio)	Coefficient (t-ratio)	Coefficient (t-ratio)
Constant	0.202 (.071)	-0.019 (-.007)	0.345 (.136)	0.482 (.193)
Southern	-0.490 (-.813)	-.527 (-.883)	-0.283 (-.519)	-0.342 (-.613)
Age	0.021 (.586)	0.022 (.601)	0.009 (.249)	0.004 (.134)
Female	0.360 (.610)	0.498 (.838)	0.667 (1.142)	0.745 (1.266)
Nonwhite	-1.383 *** (-2.506)	-1.345 *** (-2.473)	-1.058 *** (-2.044)	-0.981 *** (-1.938)
Family System	-0.861 * (-1.552)	-0.670 (-1.215)	-0.927 ** (-1.876)	-0.800 * (-1.582)
Client Mental Health	-0.473 (.836)	-0.514 (-.920)	-0.166 (-.302)	-0.183 (-.337)
Client Physical Health	-0.465 (-1.120)	-0.421 (-.995)	-0.383 (-.976)	-0.313 (-.798)
# Substance Abuses	0.642 ** (1.766)		0.795 ** (1.786)	
Client Substance Abuse		0.888 (1.165)		0.648 (.815)
Substance Abuse-Others		0.377 (.549)		0.893 * (1.343)
Low Income	-0.664 (-1.164)	-0.601 (-1.068)	-0.441 (-.845)	-0.319 (-.597)
Significance level-model	0.067 **	0.189 *	0.056 **	0.242

*** Significant at .05 level or less
** Significant at .10 level
* Significant at .20 level

With the exception of the estimated logit equation in column 5, three of the four logit models on Table 3 are significant. In these models, the estimates have found a statistically significant association between an adverse outcome and the collection of variables.

The results for variables are very similar in all models. All equations indicate that investigations are less likely to result in adverse findings when the client is non-white. In three of the four equations, the coefficients for family system indicate that adverse findings are more likely for those with weak family systems. Those equations that include the variable for number of substance abuses show a statistically significant association between adverse findings and a greater number of substance abuses in the client's environment. The equations with separate substance abuse variables suggest that the allegation of financial exploitation is more likely to be confirmed when either the perpetrator or another important person close to the client is the substance abuser. The coefficients for substance abuse by the client are statistically insignificant.

Conclusions

The following indicates those factors that are significantly associated with a higher probability that an allegation of financial exploitation will be reported to Adult Protective Services: there are others in the client's environment who are substance abusers; there are a greater number of substance abuses in the client's environment; client is a substance abuser; client is non-white; client is in poorer mental health; client is in better physical health; and client is low income. There are no variables significantly associated with a lower probability that an allegation will be made.

Those factors found to be significant for predicting a type of allegation were not necessarily predictive of whether the complaint was justified, ie. the client found to be at risk or actually victimized. Of the variables listed in the preceding paragraph, only substance abuse, in three of the four estimates in Table 3, also shows a statistically significant association with a higher probability of an investigation yielding an adverse outcome. All estimates in Table 3 show a statistically significant association between the client being non-white and a lower probability that the complaint will have an adverse finding. None of the other variables statistically associated with an allegation of financial abuse are statistically associated with the investigation's outcome. On the other hand, while strength of the family system was not significant in whether there would be a financial exploitation complaint, three of the four estimates in Table 3 find that clients with weak family systems who do allege financial exploitation are more likely to have those complaints substantiated.

This study alone is not sufficient for definitive findings that direct policy or program actions. The results from further research to confirm or dispute these preliminary findings, however, may have important implications for professional practice. Currently, adult protective services in every state spends scarce resources on programs that seek to identify potentially abusive families and vulnerable elders for early intervention efforts. Each state also has a federal mandate, effective 1991, to establish multi-agency prevention programs for targeting "high-risk" populations. Effective intervention and treatment strategies on state-wide levels have been a high priority of U.S. Administration on Aging grants programs.

The great majority of these program efforts are based on the victim profiles cited in earlier elder abuse studies. These characteristics differ from our findings to a large extent. Unlike the majority of the current literature, we found advanced age, gender, and geographic location not statistically significantly associated with either initial allegations or substantiation of complaints. We also found that the majority of other characteristics cited in the literature (poor physical health, poor emotional health, low-income) were associated with reporting behavior but not with outcome. Our findings concur with the literature concerning substance abuse and family supports. None of the current literature considers the importance of the client's race in determining not only vulnerability (ie. possibility of an allegation) but victimization (ie. outcome of the investigation).

Accurate modeling, based not only on allegations but on investigation outcomes, is vital if adult protective services, and ancillary agencies such as state departments of consumer affairs that also receive complaints of financial exploitation, are to effectively identify the at-risk population and improve the efficiency of their investigation and intervention programs. We have some initial indication that the accuracy of the profile models currently used in social welfare practice can be improved. Further refinement of our logit equations, keeping those variables exhibiting some potential association, omitting those variables drawn from the literature that were not statistically significant and substituting others from the literature that were not initially included (ex. mental illness, marital status, client living arrangement) will be a second step towards better early identification of elders at-risk for or victimized by financial exploitation.

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Endnotes

1. In making this decision, we are guided by thoughts like those of Maddala (1977): "At what level do we consider that an improbable event has occurred? When the probability is 5, 10 or 20 percent? This is quite arbitrary, and...it cannot be decided without an explicit consideration of the losses involved in each decision (p. 45)." Bradley (1976), in discussing appropriate levels of significance notes: "The decision-maker, of course, need not be a slave to convent and he may select the value that affords the degree of protection against a Type I Error that he feels is appropriate his needs (p. 262)."

Developing Curricula in Consumer Affairs

Richard Widdows, Purdue University[1]

Many institutions of higher education which offer degrees in consumer economics or consumer studies are introducing changes into their programs to reflect the growth of the consumer affairs profession. The changes must take into account the special needs of the profession as regards skill requirements, while giving students an insight into how to deal simultaneously with end consumers and "internal" business customers.

Demand for Consumer Affairs Degrees

The 1992 edition of the Membership Directory of the Society of Consumer Affairs Professionals lists 2,656 members representing 1,228 Companies (SOCAP, 1992). Twenty years ago, SOCAP did not exist, and neither did the jobs held by the 2,656.

The growth of consumer affairs in the private sector came at a time when the emphasis on consumer protection in the public sector was diminishing. Since, initially at least, the skill requirements for the two kinds of careers were similar, it was natural that faculty and students in consumer economics or consumer studies degree programs would expect the new profession to be an outlet for their graduates. Supply would create its own demand.

In reality, the new profession did not take up the slack in the consumer studies graduate market. In the early days, this may have been due to an attitude prevalent at the time that special skills were not essential for the profession. This attitude was summarized in the satirical statement, "Anyone who can push a shopping cart can be a consumer affairs manager." I would also contend that involved faculty were not anxious to reach out to the new profession. Attendance of ACCI members at SOCAP meetings was rare, and few initiatives were taken on either side to bridge the gap between the two organizations. A major exception to this was the internship program offered jointly by ACCI and SOCAP, which until recently was administered through Oklahoma State University.

There have been signs of late of a recognition of mutual interest between ACCI and SOCAP. The consumer affairs profession has developed to a point where specific skills are required which higher education institutions are in a unique position to offer. Individual consumer studies programs have reached out to the SOCAP members in their market area, and there are now six Student Chapters of SOCAP. The time for serious discussion of curriculum needs of the profession is upon us.

Supply Responses

The purpose of this session is to discuss some of the supply responses that have been made in higher education curricula to meet the emerging needs of the profession. We will look at three aspects of curriculum development.

A major function of the consumer affairs professional is communication with customers. Communication is an art, which requires hands-on experience for full development of skills. As such, internships have been a feature of most programs which reach out to the profession. Karen Holden will describe the successful program at the University of Wisconsin-Madison.

Behind the take-off of the profession has been technological development in computers and communications which allow data from consumer communications to be trapped and analyzed (Anton, Bennett and Widdows, 1991). Indeed, the prime function of the profession is now being characterized as transforming consumer data into actionable information for management. Karla Hay will report on a new course at Purdue University which simulates the answer center environment and involves students directly in consumer information management.

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[1] Professor, Consumer Economics

A tenet of consumer affairs is that if you want to find out what your customer want, ask them. John Brady will report on a survey of SOCAP members which concerned the kind of skills they look for when they hire college graduates. The information supplements studies by ACCI members of the characteristics deemed desirable in consumer affairs professionals (Maynes 1988, Garman 1990).

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Developing an Internship Program

Robin A. Douthitt, University of Wisconsin, Madison[1]

This discussion pertains to consumer affairs internships in the private sector and specific University of Wisconsin, Madison experience.

Successful internship programs are ones where universities build a long term relationship of trust and cooperation with a sponsor. Although our focus today is on private sector internships, initially establishing unpaid placements with government agencies can serve as an excellent foundation on which to build an internship program. At the University of Wisconsin, Madison, the consumer affairs internship program began in 1981. It was (and is) an elective experience and most initial opportunities were unpaid with government agencies. Over time, the most successful unpaid relationships were ones where sponsors included student interns in their every day operations. This level of commitment helps ensure a positive student internship experience and a steady flow of highly qualified applicants.

Some of the least successful relationships, either paid or unpaid, were special initiatives where project completion was not central to the sponsor's operation. However, our experience is that paid interns seldom suffer from lack of sponsor attention. Thus, we now only accept new sponsors who will make long term commitments for paid internships. This policy has also opened the self-supporting student applicant pool, a group who previously could not afford to spend up to 15 hours per week at an unpaid position.

Internships provide students a unique opportunity to apply theories and learn skills prior to graduation. Feedback from alumni surveyed 6 months after graduation indicates that the internship experience gave them an edge in early and field specific job placement. The internship experience can also provide career exploration, teaching students before graduation whether or not they are suited to a field.

From the university's perspective, although consumer affairs programs are not established to teach specific skills, it is essential that we keep our finger on the pulse of business to ensure that we are preparing students with a relevant knowledge base. Internship programs provide opportunities for faculty to interact with business professionals and thus better understand business needs. Internships can also facilitate joint research projects. At Wisconsin, we have developed such a joint endeavor where, with the assistance of an undergraduate intern, we jointly with The Haney Group, conduct annual surveys to identify emerging consumer issues.

A primary consideration to be weighed when developing an internship program is the necessary resource commitment. One can easily underestimate the resources necessary for program success. For programs just beginning, faculty course release and a permanent administrative assistant with whom long term sponsor relationships can be developed is necessary. This is especially critical if faculty plan to rotate among themselves, responsibility for the internship program.

As to the future of these ventures, as we grow in our understanding of what we and our students have to offer businesses, so does our responsibility to develop new internship opportunities. We need to better educate ourselves in international consumer affairs and develop student opportunities for international internship experiences. I further believe that business's consumer research needs can be highly consistent with our graduate student educational objectives and as such more advanced level internships are needed.

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[1] Associate Professor, Consumer & Family Economics

CRIS in Class: Purdue's Experiment with Teaching Consumer Response and Information Systems in a Computer Laboratory.

Karla A. Hay, Purdue University

The GRAPEVINE was developed to give the Consumer Affairs' students in the Department of Consumer Science and Retailing at Purdue University an opportunity to operate a Consumer Response System. The "hotline" gave the students "hands-on" experience with developing, operating and maintaining a consumer response system.

For the past few years, educators and executives have been emphasizing customer satisfaction to their students and their employees. One method of increasing customer satisfaction is by listening to their customers. Ergo, the development of 800 hotlines.

With 800 numbers consumers were given a chance to voice their opinions about products and services. At the same time, companies were becoming overloaded with all the information they received. TARP (Technical Assistance Research Programs) Information Systems was one of the leading computer software companies that developed a system that would trap the information companies were receiving. With this information kept in a data base companies were now able to use this information to better analyze their market and promote their product. After some refinement CRIS was developed. CRIS (Consumer Response Information System) was designed to be used by consumer affairs departments to simultaneously trap incoming communications from the customer.

In the Department of Consumer Sciences and Retailing at Purdue University, Dr. Widdows sought a 800 system that could be used in a college setting. A course was developed to take advantage of the technology available and also give the students experience with corporate America. Thus CSR 391W - Computerized Consumer Response and Information Systems course was developed.

Course Objective

To involve the students in the development and administration of a computerized consumer response and information system for the Purdue community.

Course Goals

1) To develop by mid-April a hotline for the CSR department to allow students to air concerns, inquiries, comments and complaints.

2) To implement a tracking system that will provide an identifiable focused source of information for the CSR students.

3) To promote and enhance student involvement and satisfaction within the CSR department and university.

4) To train consumer affairs students in all aspects of consumer information handling.

5) To offer the student operators certification in the TARP response system.

6) To establish a core system for the Consumer Science and Retailing department and the eventually expand the system throughout the university.

Class Structure

The class was structured to replicate a corporate setting. Each student was required to sign up for at least 2 of the departments within the company The GRAPEVINE. The four departments were 1) Research Department; 2) Programming Department; 3) Finance Department; and 4) Marketing Department. The department heads were required to report to the Vice President (professor) and the Executive Assistant to the Vice President (teaching assistant).

Research Department

The Research Department consisted of three areas Focus Group, Survey Team, and the Interview Team. Each area was responsible for gathering information from the target market.

The Focus Group solicited opinions as to the usefulness of the program from other students who would be benefiting from the system.

The Survey Team developed categories and subcategories to be used as the basis for the coding system.

The Interview Team solicited opinions of the faculty as to their concerns about the system and the problems the may see develop.

Programming Department

The principle function of the programming Department was to finalize the codes groups and subcategories of all problems that could occur.

Finance Department

The Finance department was responsible for developing the budgets for the implementation and maintenance of a system of this magnitude.

Marketing Department

The Marketing department was responsible for developing a marketing plan to promote the system to the target market.

What Business Consumer Affairs Professionals Want in Graduates

John T. Brady, University of Utah[1]

As institutions of higher education train students for careers in consumer affairs, it is necessary to identify those competencies and traits most desired by the profession. This study reports the results of a Purdue University survey of business consumer affairs professionals which attempted to identify those competencies.

Defining the Consumer Affairs Major

In the best two decades, colleges and universities began offering degree programs in consumer affairs, principally within home economics programs (Burton & Bower, 1980).

The competencies required of consumer affairs graduates are often were ill-defined or in dispute (Goebel & Miller, 1983; Christner, 1988; Goldsmith & Vogel, 1990). For an educator in consumer affairs, information concerning the needs of the profession is critical. As Christner (1988 p. 55) observed, "For most of us (educators), employers are the final arbiters with regard to career paths..."

Are educators in consumer affairs programs providing students with the skills required by potential employers in the field? Findings from a Society of Consumer Affairs Professionals (Goldsmith & Vogel, 1990) survey indicated communications and business administration would be the most advantageous majors for those intending to begin a career in business consumer affairs. In order to better meet the needs of the profession, Goldsmith and Vogel (1990) and Garman (1990) suggest greater information flows between academia and the profession are needed.

Survey Results

A survey of firms represented in the Society of Consumer Affairs Professionals was conducted in the summer of 1991 by the faculty in the Consumer Affairs program at Purdue University. One hundred and fifty-five consumer affairs professionals in different firms responded to the survey. A majority of the respondents reported department functions included complaint resolution, consumer education, issue tracking, hot line management, and public relations.

As with Goldsmith and Vogel (1990), the consumer affairs professions surveyed identified communications as the most important area of study for new employees in consumer affairs. Consumer behavior and business writing were other areas of study also identified as important. Applied areas of study tended to be cited as the least important courses for a new consumer affairs employee.

The traits identified as most important in an employee in a consumer affairs department were interpersonal skills, oral communications ability, and the ability to plan. The traits which were identified as least important included social involvement and goal orientation.

Forty-five percent of the responding professionals believed that employment opportunities within their department would be growing. Most of the growth, however, was expected in support and technical positions with less in the professional or managerial level.

Overall, respondents were optimistic about the future of consumer affairs within their companies. Over half expected increased support from management, better relations with other departments, improved status for consumer affairs, and better relations with consumers into the 1990s.

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[1] Visiting Assistant Professor, Consumer Economics

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Journal Compendium in Family and Consumer Economics

Mark Lino, U.S. Department of Agriculture[1]

Journal compendiums help researchers better prepare their studies for publication. Because no compendium existed specifically for researchers in the field of family and consumer economics, the Family Economics Research Group of the U.S. Department of Agriculture and the NCR-52 Family Economics Committee produced such a compendium.

The NCR-52 Family Economics Committee identified 131 journals relevant to family and consumer economics. The Family Economics Research Group developed and pretested a mail questionnaire that was sent to the editors of each journal in July of 1991. A letter reminding editors to return the questionnaire was mailed a few weeks later. A second mail questionnaire was sent to nonresponding journal editors in September of 1991.

Responses were received from 92 journal editors (a response rate of 70%). Of these, 82 completed the questionnaire, 4 indicated their journal did not accept outside manuscripts, 3 believed the journal covered topics not in the realm of family and consumer economics, and 3 stated the journal had ceased publication either temporarily or permanently.

The following information was collected from each journal:

Sponsor: Journal's affiliation, usually a professional association or university.

Appropriate topics: Consumer education, consumer/ family economics, consumer/family finance, consumer/ family law, consumer/family policy, consumer/family psychology, consumer/family sociology, financial counseling/planning, or other related topics.

Primary audience: Academic, practitioner, government, or other category.

Frequency of issue: Number of issues each year.

Copies per issue: Paid and nonpaid subscriptions.

Type of review: Double blind (authors and reviewers unknown to each other), single blind (authors known to reviewers or reviewers known to authors), open (authors and reviewers known to each other), or editorial (review by in-house editors only).

Acceptance rate: Percent of manuscripts submitted in 1990 that were eventually published or are very likely to be published.

Average review time: Amount of time between when a journal first receives a manuscript and when the authors are notified of the results of the first review.

Number of reviewers: Number of people, excluding in-house editors, who review a submitted manuscript.

Percentage of invited articles: Percent of articles published in 1990 that were requested specifically by the editor or were from an annual conference or meeting.

Minimum page length and preferred range of pages: Length of submitted manuscript, double spaced, including tables, figures, references, and appendices.

Page charge to publish manuscript: If there is such a charge, the amount. Many journals also noted a submission fee.

Manuscript guidelines: Where to obtain guidelines-- the journal, editor, or elsewhere. Many journals

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[1] Exonomist, Family Economics Research Group

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noted a particular style guideline.

Other information: Editors were asked to give any other information that would help researchers interested in publishing in their journal.

Bound and diskette copies of the compendium will be sent to the deans of Colleges of Human Ecology, Home Economics, or Agriculture in the coming weeks. Researchers are free to copy the diskette. If a person is not able to obtain a copy of the compendium at their institution, they may contact the Family Economics Research Group (301-436-8461).

What Consumer Economics Textbooks Say About Service Contracts

Norleen M. Ackerman, Utah State University[1]

Substantial effort is devoted to marketing service contracts (SCs) to consumers. However, there is evidence that SCs may not be a good buy for consumers. Education could assist consumers in understanding and evaluating SCs. The purpose of the study was to compare the SC information in college and high school consumer economics textbooks using content analysis.

The sample was all 5 college textbooks in consumer economics published in 1988-1991, and 5 available high school textbooks from the same period. The college textbooks, with citation numbers used hereafter, were: 1=Garman 1991, 2=Herrmann 1988, 3=Lee & Zelenak 1990, 4=Leet & Driggers 1990, and 5=Miller 1990. The high school textbooks and citation numbers were: 6=Bonnice & Bannister 1990, 7=Campbell 1988, 8=Green 1988, 9=Ryan 1990, and 10=Wyllie, Lang, Green, & Warmke 1988. Textbooks were classified as college or high school level based on authors' preface statements. Index terms searched were SCs and extended warranties/contracts. If not found, the terms warranties, repairs, and services, were searched in the index and the listed pages. The quantity of SC information was measured in textbook lines; columns were converted to full line equivalents.

Findings

All 5 college textbooks contained SC information, varying from 3 to 93 lines. Four texts (1,3,4,5) indexed SCs; the 5th text (2) included SC information under automotive repairs. One text (1) added that SCs were commonly called "extended warranties" although they were not warranties and explained how SCs differed from warranties. Four college textbooks (1,2,4,5) defined SCs. Defini- tions varied and had some inconsistencies, partly because they were about different products (major appliances, electronic equipment and automobiles). One text (1) added that SCs are a form of insur- ance. Three texts (2,4,5) stated SCs were avail- able at product purchase; two texts (1,4) stated they were available when the warranty expired. All college texts commented on sellers' profits from SCs or the high price of SCs in comparison to average repair costs. One text (2) suggested that those making very heavy use of the purchased product might find SCs a good buy. One text (4) suggested purchasing a SC after one year of ownership if the product was a "lemon". Two texts (2,4) suggested an alternative to SCs: add money monthly to a repair fund for use if needed. Three texts (1,2,4) suggested purchase criteria.

Four high school texts (7,8,9,10) contained 12 to 20 lines of SC information; the other text (6) did not mention SCs. Three texts indexed SCs (7,8) or extended SCs (9); the remaining text in- dexed warranties, including SC information there. One text (10) used the term extended service contract or warranty and 1 text (9) most frequently used the term extended warranty. One text (10) distinguished between warranties and extended SCs. Four textbooks (7,8,9,10) defined SCs. One text (8) added that SCs were like insurance policies. One text (8) reported the tendency of SCs to be overpriced, briefly reporting findings from the MIT Center for Policy Alternatives. Two texts suggested the value of SCs to consumers was peace of mind (10) or repair insurance (8). Selection criteria were listed by 2 texts (7,10).

Discussion and Conclusions

Most textbooks contain SC information. College texts generally provide more information. The preferred term is SCs, but variance in terminology may not be resolved soon. The FTC and consumer educators generally prefer the term SCs; sellers often use the term extended warranty. SC definitions are somewhat inconsistant as to coverage and contract time period. Conflicting information may leave false impressions of the protection provided. All college texts and one high school text evaluated the cost effectiveness of SCs. Authors may be describing SC provisions inconsistently because more complete information is not available. Further research on the usual terms and cost effectiveness of SCs is needed.

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[1] Assistant Professor,
Home Economics & Consumer Education

Children and Consumer Decision Making A La Carte

Jackie L. Coon[1]
Karen L. Peterson[2]

A significant body of research exists documenting children's cognitive strategies as a determinant of consumer socialization (Carlson & Grossbart, 1988; John & Whitney, 1986; Peracchio, 1992). An interesting developmental component is the holistic view of children's scripting processes as they become potential participants in the marketplace. Learning a script about shopping requires variable levels of adult involvement as opportunities for modeling, behavior approximation, and practice.

Methodology and Sample Description

Data were collected from a grocery store where the retailer provided down-sized models of wire shopping carts for children to use. A total of 139 unobtrusive in-store observations of children aged 2-9 were made. The data were collected with consideration to demographics, method/process of item selection, check-out and payment procedures, adherence to prescribed guidelines for proper cart behavior, and parent/child interaction.

Findings and Discussion

Mothers provided more direction than fathers in terms of item selection and in-store behavior. Mothers were also more likely than fathers to engage in higher levels of parent-child interaction. There was a strong positive relationship between length of shopping trip and degree of parent-child interaction. Mothers shopped with lists more than fathers, and were more apt to share the list with female children who, on average, demonstrated a higher level of involvement in the shopping process. Most children were not highly involved/included in the check-out procedure, but male children were more likely than female children to be allowed to handle money in the exchange process. Children who shopped with their mothers were less likely to abandon their carts than those who shopped with their fathers.

Children who had used the carts before were generally more well-behaved in terms of cart usage, exhibited higher levels of involvement in the shopping experience, interacted more with their parents regarding the shopping process, and thus tended to model adult shopping behavior more so than the less experienced cart users. It is yet unclear whether parents perceived the carts to be a teaching tool; children who had prior experience with the carts did not treat them as toys, but rather as props to aid in modeling their parents' shopping behavior.

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[1] Doctoral Student, Washington State University

[2] Associate Professor, Washington State University

Adoption of Financial Planning Practices by Midlife and Older Women

Annette T. FitzGerald, University of Connecticut[1]
Ann C. Foster, University of Connecticut[2]

In 1987 the American Association of Retired Persons initiated the Women's Financial Information Program (WFIP) for midlife and older women. A major objective of the WFIP is to enable participants to adopt financial planning practices that can help them gain control over their lives.

Methodology

To assess WFIP effectiveness, a six-page followup survey was mailed to a stratified sample of 1547 participants of programs held nationwide from September 1989 to May 1990. Useable questionnaires were returned by 578 participants, a 37% response rate.

Findings

The survey listed 28 financial practices corresponding to the concepts covered during the seven week WFIP series. Respondents were asked if they had adopted or planned to adopt a practice as a result of series attendance. They also indicated whether a practice had been adopted before series attendance or whether they were in the process of adoption. The proportion adopting a particular practice ranged from 10% for using strategies to reduce taxable income to 44% for developing or updating a net worth statement.

Respondents indicated that before WFIP attendance many had adopted the 13 basic financial planning practices covered in the first three sessions. These practices include budgeting and paying bills. Substantial proportions, however, had adopted or planned to adopt these practices as a result of series attendance.

Before WFIP attendance 29% of the respondents had determined retirement and/or future income needs and how to meet them; about 16% had adopted the practice and 23% were now doing so. Before WFIP attendance 25% had set up or reviewed an investment plan while 23% had adopted the practice and 14% were now doing so. An additional 25% were planning to adopt each practice. Many respondents had done some estate planning before series attendance which may explain why only 13% had drafted or revised a will and only 18% had set up or reviewed an (existing) estate plan. About a third were planning to adopt each practice.

Conclusions

Findings indicated that WFIP participation had motivated respondents to adopt financial planning practices. While encouraging, the substantial proportions still planning to adopt practices related to retirement planning, investments and estate planning is of concern. This is because it could mean that some respondents were using intentions as a way to put off long range financial planning. Even if these respondents eventually adopt intended practices, the fact that nearly three fourths are over 55 makes any delay hazardous to future financial security.

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[1] Extension Educator

[2] Extension Consumer and Family Economics Specialist

Financial Freeway:
A Financial Management Program for the High School

Virginia A. Haldeman[1]
Alice M. Crites[2]

SITUATION

"FINANCIAL FREEWAY," was developed by Nevada Cooperative Extension in response to a problem experienced by a local bank. The bank agreed to provide funding which enabled Cooperative Extension Professionals to develop a curriculum, produce teaching materials, and hire Extension Associates to teach a week-long financial literacy program in the high schools in Clark County. **"FINANCIAL FREEWAY"** was presented as a portion of the curriculum in nine high schools, in twelve different courses, and included students in grades ten through twelve.

The Program

The objectives of the program were to enable participants to: 1. compare the costs of financing the purchase different automobiles; 2. determine how insurance costs affect the cost of owning and operating three different automobiles; 3. develop a budget for a given level of income, including car payment, insurance premiums, daily living costs, and a savings plan; 4. select the financial institution and/or instrument that will yield the greatest rate of return on savings; and 5. recognize and determine the consequences of irresponsible financial behaviors.

The program materials included a pre-test and a post-test, four locally produced videos, work sheets, and a simulation game. Financial literacy was assessed during the initial class hour. Each student then selected one of six automobiles to purchase. That was used as the basis for making insurance decisions and determining the car payment that would be included in their budgets. Current wage rates and jobs the students actually held were used as the basis for determining the income for the budget. Before completing the multiple response test at the end of the unit, students participated in a simulation game that reinforced the concepts they had studied during the week.

Results and Implications

Over 6,000 high school students participated in **Financial Freeway**. Responses to the pre-tests and post-tests of a sample of 1706 students were analyzed. Post-test mean scores (M = 22.71) were significantly higher than pre-test scores (M = 19.00) ($\underline{t} = -34.37$; $\underline{p} < .000$).

The analyses also provided information which helps identify the audience which would be most effective to target with this program. Juniors had the highest mean post-test scores (M = 23.32), and mean scores for both juniors and seniors (M = 23.22) were significantly higher than those for sophomore's (M = 22.33) (F = 6.84; $\underline{p} = .0011$). Mean post-test scores of students in Accounting (M = 25.64) and Marketing (M = 23.82) were significantly higher mean scores on the post-test (M = 23.45), than those who were not working but looking for part-time work (M = 21.53) (F = 5.00, $\underline{p} = .005$). Those who already had a car and who had a driver's license had significantly higher post-test scores than those who did not have a car or did not have a driver's license.

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[1] Professor, University of Nevada, Reno

[2] Nevada State Extension Specialist

The program was effective for all students, however, those who had a vested interest in managing their money had the most knowledge. That included students who had a car, had an income, and were enrolled in classes that had a pertinent curriculum. It was likely that these students had financial management classroom lessons reinforces through practical experience in their lives and were at a teachable moment. This project had shown that a brief encounter with financial management education, especially at a teachable moment, pays off with significant learning.

The ALPHA Study
A Look At Pre-Need Horizons in America
A Perceptual Study of Opinion Leader Knowledge

Paul J. Haussman, University of Winconsin-Milwaukee
Gerald M. Becker, University of Wisconsin-Milwaukee
Jo DeMars, DeMars & Associates, Ltd.

The purpose of the study was to provide a vital "snap shot" of the pre-funded funeral marketplace in 1991, as seen by opinion leaders among the funeral service industry, government regulatory agencies, consumer educators and advocates, and older adult volunteers and counselors. Topics explored included: how pre-funded funerals are being marketed in 1991; who is selling pre-funded funerals, where, when, why and how; how pre-funding trends are expected to track in the next five years; what do consumer and older adult opinion leaders know about pre-funding; what are the problems associated and anticipated with pre-funding; what information do consumers need in order to make sound decisions; how is pre-funding being regulated in 1991; how do the opinion leaders feel pre-funding should be regulated, when and by whom?

Methodology

A four-page, short-answer, mailed survey was sent to 1000 opinion leaders in the funeral industry, consumer education, and government regulatory agencies.

General Observations

The researchers identified three categories of observations, and ultimately three sets of recommendations.

Knowledge Level

It was apparent that consumer opinion leaders were much less able to describe themselves as knowledgeable about the issues surrounding the pre-funding of funerals than either industry opinion leaders or government/regulators. The responses also indicated that when consumers do not have a specific interest in, and knowledge of a particular field, the lack of information may be manifested through a skeptical attitude which can result in a perceived need for increased regulation.

Consumer Protection

A common thread throughout all categories of respondents indicated there is a concern that the potential for consumer abuse is real. None of the groups indicated that there should be no regulation. Rather, the question seemed to be how extensive should the regulation be, and should the regulation be on the state or federal level. Clearly there was no strong agreement for federal legislation that would include preemption of existing state laws. However, the interest in uniformity and in commonality was apparent.

Consumer Education

The responses indicated the industry has been doing as good a job as can be expected of educating the public about what they are buying. Given the fact that they are the sellers of the product, and have a vested interest, their efforts may be of limited value. The respondents also indicated the consumer education efforts generated from the public sector are perceived as inadequate.

Recommendations

Knowledge Level

The industry will need to locate credible organizations with established consumer ties to assist in creating and carrying out joint educational initiatives.

Consumer Protection

A working conference should be convened of interested persons to determine the recommended components of pre-need regulation. The conference should also adopt the goal of ultimately drafting uniform legislation that could be adopted on a state by state basis.

Consumer Education

The production and dissemination of high quality information, produced by independent sources, through cooperative approaches and subsidization by interested industry members.

A Computer program to Help Families Analyze Their Spending

Jieyu Li, Mikyeong Bae, Sherman Hanna, The Ohio State University[1]

Families facing economic and life cycle transitions often wonder whether their spending is appropriate for their goals. This may occur when a family is trying to decide how to increase savings for future goals, or to allocate more money to key spending categories such as insurance. One way to view these issues is to ask "How do families like us spend their money?" (Hanna, 1983; 1990). A computer program can answer this question (Hathaway, 1986). The program, however, has not been subject to intensive academic scrutiny regarding its assumptions. The purpose of this paper is to describe a prototype computer program for helping families analyze their spending, and to solicit feedback regarding program assumptions.

The program consists of three main parts:

1. A module for "predicting" family spending in 16 categories, based on age of householder, education, income, family size and other variables;
2. A module for prompting the user to estimate the family's actual spending on these categories; and
3. A module for interacting with the user for "what then?" questions. The module, for example, might point out that the user spends more on food away from home than similar families, and would provide suggestions for reducing spending in that category.

One of the challenges in developing a program is defining the level of detail of the expenditure categories. If the categories are too broadly defined, users may not be able to understand what the category includes, lessening its usefulness in budgeting. For example, if food is one category, a user will not get insight into food-away-from-home spending. On the other hand, with very narrow categories, many households may have zero expenditures during time periods of a year or less, which creates problems for statistical estimation and interpretation. The prototype version of program uses 16 categories: food-at-home, food-away-from-home, alcoholic beverages, apparel, housing, utilities, household equipment, household operations, transportation, entertainment, personal care, reading/education, tobacco, insurance, health care expenditures, and miscellaneous expenditures such as charity contribution, life insurance and etc.

Another issue is how to define "similar families" in terms of demographic characteristics. The variables used are income and variables for region of residence, size of city, family size, education, rent or own and age, plus some interaction terms. A two-stage process of statistical estimation was used for each expenditure category: a linear probability regression for predicting whether the household had nonzero expenditures (logit may be used for a future version), and an expenditure regression estimated for households with nonzero expenditures. The dataset used for the prototype program was the first quarter of the 1986 BLS CES Interview Survey. The estimated coefficients from the regressions were used in the computer program to predict expenditures for each category for a particular household: predicted expenditure = predicted probability times predicted expenditures for households with nonzero expenditures (Li and Bae, 1992).

A consumer using the program is prompted to enter aftertax income, which is used to estimate total expenditure using a prediction equation based on BLS data. The estimate of total spending is a proxy for normal income, and is used for the probability and expenditure predictions based on parameters estimated from BLS data. The prototype program can be used to estimate average spending for families of particular combinations of characteristics.

Because the purpose of the program is to prompt families to analyze their spending, assumptions used in the third part of the program may be as important as the assumptions used in the first part. Ultimately what is needed is an expert systems approach which would simulate the interactions of the most competent human expert in asking the user about family goals and prospects in order to help the user analyze his or her budget.

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[1] Family Resource Management, Ph.D. students and professor.

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EFNEP Plus: A Money Management Calendar and Education Program for EFNEP Clientele

Mary Ellen Rider McRee[1]
Polly Gettinger[2]
Karen Konzelmann[3], Purdue University

Data from an experiment to test money management materials for limited resource audiences was presented. Statistically significant differences were found between the control and experimental groups in the change from pre- to post-test concerning whether clients kept a list of expenditures and, financial goals.

Between 1970 and 1988, the number of families in poverty within the state of Indiana increased. Based on experiences of working with EFNEP clientele and other limited resources audiences, the 1991 Report of the Limited Resource Audiences Committee of the Cooperative Extension Service also indicated that new programs designed to include management components were needed. However, few materials and little data existed about low income persons and their money management.

Purpose

The purposes of the study were to gather descriptive information about the intended audiences and to identify changes in money management practices by the participants after receiving or not receiving money management instruction.

Methodology

The study employed a nonequivalent control-group design to test the effectiveness of the materials and the instruction. The control group members were provided the money management calendar and workbook which they either read as a group or took home for self study. The experimental group consisted of EFNEP clientele who received a calendar and instruction for each of the twelve lessons included in the corresponding workbook.

A survey questionnaire was used to collect information regarding money management behavior in the pre- and post-test format to both control and experimental group members. Demographic data was collected for both groups using the intake form in use by the EFNEP program assistants.

Findings

Change in money management behavior was significantly different for the experimental group who had received both the materials and the instruction. The experimental group members were more likely to maintain a list of personal expenditures and to make a list of future money management goals, and put aside money for the future.

Implications

Money management materials specifically developed for low income persons coupled with individualized instruction can assist clientele in making changes in money management behavior. Materials can be especially relevant when developed with input from those receiving and/or providing the instruction.

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[1] Assistant Professor, Consumer Science & Retailing

[2] Extension Specialist, Consumer Sciences & Retailing

[3] Extension Specialist, EFNEP

Factors Affecting Households' Expenditures for Entertainment Services

Sheila Mammen, University of Massachusetts, Amherst[1]
Ann Foster, University of Connecticut, Storrs[2]

Introduction

Little is known of households' expenditures for leisure or entertainment services. Such expenditures are often considered frivolous, sometimes even unnecessary. In an economic sense, leisure is a concept that lies towards the apex of a Maslowian pyramid since one is more likely to engage in leisure activities only after basic consumer needs (food, shelter etc.) have been satisfied to at least a certain threshold level (Culligan and Murphy, 1989). However, leisure is an important element of one's life and is known to contribute positively to an individual's sense of well-being. Marans and Rodgers (1975), found nonwork activities, which includes recreation and leisure experiences, and family life to be the best predictors of the quality of life. Since 1982, the rate of increase in prices for entertainment services has been greater than that for all services and all items. In spite of this, the average expenditures for all entertainment services, by purchasing households, was $574 ("Households with Expenditures for Entertainment Services," 1990). The purpose of this research is to examine the relationship between a variety of socio-demographic and economic variables and households' expenditures for entertainment services.

Methodology

The data base for this research was the interview component of the 1986 Consumer Expenditure Survey. The sample of 2974 households used in the study included married couple households, single parent households, and single households. Multivariate tobit regression analysis was used to assess the influence of a variety of socio-demographic and economic variables on expenditures for leisure services. These services included: 1) club memberships, 2) fees for participant sports, 3) fees for recreation lessons and instructions 4) admission fees, 5) fees for vacation rentals, and 6) expenditures for other entertainment services. The independent variables used were 1) household income, 2) household size , 3) education of reference person, 4) race of reference person, 5) age of reference person, 6) household composition, 7) number of household earners, 8) home ownership status, and 9) region of country.

Results

As was expected, household income was positively associated with expenditures for entertainment services. Higher levels of education were also positively associated with such expenditures. The notable exception was in the area of participant sports where those households with reference persons who had a post-graduate education spent less. Households with a reference person who was black spent less on entertainment expenditures. Age had a distinct effect on entertainment expenditures: the older the reference person, the lower were such expenditures in the household, except in the case of club membership.

Of the households with children, those with children between the ages of 6 and 17 influenced entertainment expenditures the most. These households spent more on club memberships, participant sports, fees for lessons, vacation rentals and other entertainment services. Single parent households spent less in every category other than fees for lessons. Contrary to what one might expect, there was also less expenditure among single householders for almost all the entertainment services. Home owners were more likely to have a greater demand for all entertainment categories with the exception of admissions fees. Households in the Midwest tend to spend less on entertainment than households in the Northeast and West.

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[1] **Associate Professor, Consumer Studies**

[2] **Extension Consumer & Family Economics Specialist**

Conclusion

Expenditures for entertainment services were positively associated with household income and education. The impact of the age and household composition variables on such expenditures demonstrate the possibility of a distinct life cycle effect. It is interesting to note that married couple households spent more on entertainment services than either single parent households or single households. Home ownership was also found to have a positive influence on such expenditures. Studying entertainment expenditures of households is important as it provides us with a more complete picture of the relevance of entertainment among American households especially in uneasy economic times.

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Credit Card Annual Fees: Do Consumers Get What They Pay For?

Jodie E. Monger, Purdue University

Are consumers given additional features with credit card plans that have larger annual fees? Results indicate that annual fees significantly increased from 1990 to 1991 and no additional benefits were added.

Consider that bank card debt has increased from $25 billion to $91.4 billion between 1980 and 1987 (Statistical Abstracts 1989). Not included in the level of bank card debt would be the many consumers who use credit for convenience. Obviously, credit issuers do not make money on the non-revolvers. In an effort to "cover the costs" of extending credit to the consumers who do not pay a finance charge, annual fees were instituted.

Specifically, the purpose of this study is to address whether credit cards are providing consumers with features that are proportional to the cost, or annual fee. Is the general assumption that 'you get what you pay for' true to the credit card industry? The intention of this study is to consider APR to be among the features of the credit card, one that the consumer more or less purchases. One would expect cards with lower APRs, longer grace periods, and more features to have a larger annual fee.

Federal Reserve statistical releases (January 31, 1990 and January 31, 1991) were accessed.

To examine how the "price" for such features have hanged between 1990 and 1991, paired comparisons between sample means were utilized.

Annual fee significantly increased ($2.42). However, has the increase in fee from 1990 to 1991 resulted in more advantages to or features for the consumer?

A significant difference in the number of days in the grace period did increase from 23.9 to 25.1 days. Aside from the increased length in grace period, which would benefit the non-revolver, the consumer apparently did not receive additional benefits for the larger fee. APR did not significantly change between 1990 and 1991 (18.26% to 18.37%).

A significant difference in the occurrence of three features was observed: (1) extension of the manufacturer's warranty [$t(150)=1.779$, $p<.007$], (2) purchase option [$t(150)=2.242$, $p<.026$], and (3) discount on goods [$t(150)=1.771$, $p<.079$]. Despite the observed increase in annual fee from 1990 to 1991, these features occurred less frequently as part of the credit plans offered in 1991. No other significant differences were observed regarding travel accident insurance, travel related discounts, car rental insurance, credit card registration and rebates on purchase.

Generally speaking, consumers selecting credit plans in 1991 were paying more, a larger annual fee, for fewer features than were those who selected plans in 1990.

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Identifying Family Economic Well-Being Program Priorities And Target Audiences by an Environmental Scan

Patricia A. Myer, University of Nevada, Reno[1]
Virginia A. Haldeman, University of Nevada, Reno[2]

Cooperative Extension uses environmental scans as a process of obtaining broad input to establish program priorities and identify target audiences. In this study, consumer/financial issues were identified by gathering local statistical information and by noting consumer problems from recent research. A focus group comprised of credit and financial professionals was used to define issues which were most problematic locally. Finally, a survey of a proposive sample of subjects from an urban 4-county area was used to prioritize the issues.

Method

Prospective survey participants were identified by Cooperative Extension faculty based in each of the 4 counties to be surveyed. Participants were selected to represent professionals from social work, education, credit, business and public agencies as well as representatives from minority groups and the general public. Potential respondents were contacted by telephone to explain the survey and request participation. The survey was mailed to 60 subjects.

The instrument included 5 topics with 6 concerns identified under each topic. Respondents were asked to rank each set of concerns in order of importance for their community. Respondents were also asked to rank the 5 most important audiences to target out of a possible 13. Fifty usable surveys were returned for an 83% response rate. Rankings of the concerns in each set and of target audiences were computed.

Findings

The key Community Economic Concerns were: the working poor (92%), unstable family income (86%), and the increasing number of children living in poverty (64%).

Top Consumer Education Concerns were the consumer's lack of: decision making skills (76%), educational opportunities to learn money management skills (66%), and adequate information about how to select goods and services (62%).

The primary Money Management Concerns, were the consumer's: difficulty in setting spending priorities (74%), limited skills in managing financial resources (70%), and spending more than earned (70%).

Debt Management Concerns were that consumers: don't know how to control their use of credit cards (74%), don't understand how to use credit appropriately (72%), and don't know how much debt they can (safely) afford (68%).

The foremost Financial Planning Concerns were that consumers: fail to make long- and short-term financial plans (92%), are unable to save (78%), and fail to financially prepare for retirement (72%).

Audiences ranked as first, second, or third most important to target by over 45% of the respondents were: Young Families with Young Chidren (66% of the respondents); Single Parent Families (62%); Adolescents (56%), Teen Parents (50%), and Low Income Families (46%).

Implications

The top-ranked family economic well-being concerns centered on the lack of ability to manage financial resources. Respondents indicated that people not only lacked the ability to decide, plan, control, and evaluate, but that there were not adequate opportunities within the communities to learn these skills. The challenge to extension educators is to make programs visible and readily accessible within the community.

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[1] Area Specialist, Family Resource Management
[2] Associate Professor, Human Development and Family Studies

Factors Affecting Consumers' Selection of Nursing Care Facilities

Aimee D. Prawitz, Louisiana State University Agricultural Center[1]
Frances C. Lawrence, Louisiana State University Agricultural Center[2]
Peggy S. Draughn, Louisiana State University Agricultural Center[3]
Patricia J. Wozniak, Louisiana State University Agricultural Center[4]

Introduction

The criteria used by families in their selection of a nursing home is a topic that has generated conflicting research.[1] The purposes of the study were to determine tasks performed by consumers in their nursing home selection process and to investigate relationships between these tasks and a) satisfaction levels, and b) respondents' demographic characteristics. In addition, relationships between the ranking of factors consumers considered important when selecting a nursing home and respondents' demographic characteristics were investigated.

Methodology and Analysis

The sample consisted of 411 "responsible parties" (families) of nursing home residents of seven nursing homes. Data were analyzed using Chi square, Wilcoxon rank-sums test, Spearman's rank correlation, and the Friedman two-way analysis of variance by ranks. Level of significance was $\alpha = .05$.

Findings[1]

The tasks specified in the survey questionnaire and the percent of respondents who reported performing them were as follows: "visited at least one home prior to placement," (89%); "checked about reputation of the home," (51%); "investigated all homes in the area," (37%); "forced to make quick decision about placement, (36%); "chose home all family members agreed upon," (32%); "did not have enough time to thoroughly investigate homes," (22%); "used checklist," (18%); and "selected first home with space available," (14%).

Relationships were found between particular tasks and the following respondent characteristics: income, education, gender, number of homes available, relationship to patient, and distance of respondent from the chosen home.

Consumers were less satisfied with their choice of homes when they a) had limited time for adequate investigation, b) had made a quick decision following the illness of the patient, and c) had chosen the first home contacted that had space available. Satisfaction levels were higher when consumers had investigated all homes in the area before selecting one and when the entire family had agreed on the chosen home.

Overall, consumers ranked quality of care as the most important nursing home characteristic. Ranking of other characteristics, in order, was: physical appearance, atmosphere, location, reputation, building safety, quality of food, cost, and activities. Relationships were found between some demographic variables and ranking of specific nursing home characteristics.

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[1] Graduate Research Assistant, School of Human Ecology

[2] Professor, School of Human Ecology

[3] Professor, School of Human Ecology

[4] Associate Professor, Department of Experimental Statistics

Implications

Consumer educators helping families in the decision-making process related to nursing home selection might consider the relationships between tasks performed in the selection process and levels of satisfaction. Suggestions for an improved search process could be formulated, and appropriate programs developed accordingly. Characteristics considered important, such as quality of care, physical appearance, and atmosphere are best assessed by observation. Therefore, those assisting families should encourage visitation of homes under consideration. Thorough investigation of all facets of the nursing home is critical, for the likely result of more informed choice would be more people getting the services they specifically need or want.

Endnotes

1. Complete bibliography available from authors

2. Complete findings available from authors

In Search of a Theory (or Approach) to Better Understand Consumer Decisions in a context of Varied Cultures: Case Study - Food Consumption in U.S. and Japan

Dorothy Z. Price[1]
David W. Price[2]
Debra L. Nelson[3]
Washington State University, Pullman

Economic theory alone often appears to be inadequate in identifying, specifying and interpreting characteristics of specific food products. This study represents an initial step in integrating a hedonic price function model and an organizational decision making model to better understand consumption of food products. A holistic model of this time is even more appropriate when studying consumption in various countries. Work has begun on a number of foods in the United States and Japan.

Traditional Approach To Consumer Demand

Traditionally, economists have approached the analysis of consumer demand by assuming prices of market goods sold at a specific time and place are predetermined. Theoretically, the assumption of predetermined prices is reasonable. For example, the consumer enters a grocery store and decides whether or not to purchase a particular product at the price charged by the retailer. Based on this premise, consumer demand can be estimated with the quantity of a good dependent on prices, income, and socio-demographic information. Unfortunately, this traditional approach to consumer demand provides little insight into the tastes and preferences of consumers. Several economists (e.g., Gorman (1956), Lancaster (1966), and Hanemann (1982) proposed specifying a utility function with both the market goods and the measurable characteristics of the goods as arguments.

The Hedonic Approach to Consumer Behavior

One of the structural relationships that results from this utility maximization process is commonly referred to as a hedonic price function. These functions have the price of a good as the dependent variable, and measurable characteristics of the good, socioeconomic and demographic variables, and income (or expenditure) as the independent variables.

The hedonic approach, although not new, provides a method of potentially integrating theories and concepts from a number of disciplines to better understand consumer behavior. This type of approach seems to be especially necessary when viewing consumer behavior from a multi-cultural perspective. Therefore, in addition to economic theory, consumer research needs to utilize theories and concepts from psychology, sociology, anthropology and nutrition (if studying food consumption) to develop models for empirical analysis. Reliance on these varied disciplines provides conceptual approaches which can utilize both quantitative and qualitative methods of analysis and provide a broader base for interpretation of results.

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[1] Professor
Dept. of Child, Consumer, & Family Studies

[2] Professor
Department of Agricultural Economics

[3] Interdisciplinary Ph.D. Candidate
Washington State University, Pullman

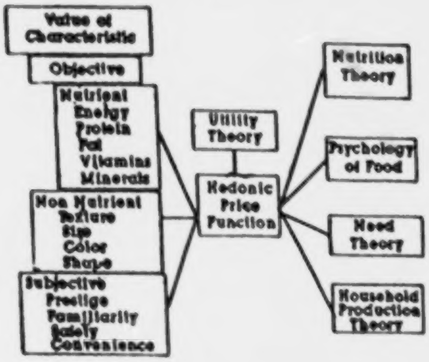
Value of Characteristic
Objective
Nutrient
Energy
Protein
Fat
Vitamins
Minerals
Non Nutrient
Texture
Size
Color
Shape
Subjective
Prestige
Familiarity
Safety
Convenience
Utility Theory
Hedonic Price Function
Nutrition Theory
Psychology of Food
Need Theory
Household Production Theory

Figure 1
Food Purchase Decision

Proposed Study

A proposed organizational model, integrating a number of disciplines has been developed for study and analysis of consumer decision making. This model developed by Hodge and Johnson (1981) has been modified by Price and Nelson (1989) for specific use with consumers.

There are many different approaches to understanding the functioning of an organization. No single one is universally accepted as superior, and all include essentially the same elements. The illustration in this paper has been selected as a framework to use in interpreting results from hedonic analysis. This model illustrates the various factors that have an impact on any one organization and can be related to consuming units in American or other societies.

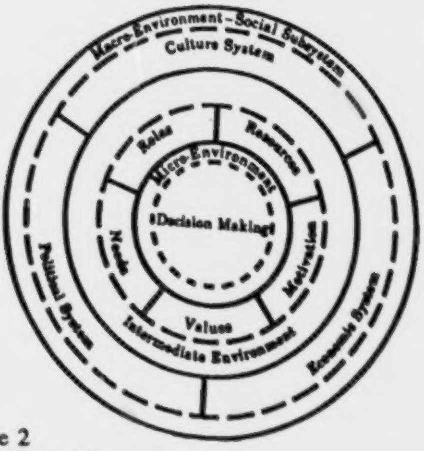
Macro-Environment - Social Subsystem
Culture System
Political System
Economic System
Intermediate Environment
Roles
Resources
Needs
Motivation
Values
Micro-Environment
Decision Making

Figure 2
Decision Making

Brief Discussion of Current Research

This study is beginning to estimate values for specific characteristics of foods. These values change with respect to time, place, and specific food items. The value placed on fat in the diet is different now than it was 50 years ago. It is different in meat than it is in breakfast cereal. It is likely different in the U.S. than it is in a third world country, but may be similar in some aspects in a developed country, such as Japan. When it differs, the explanations provided by disciplines other than economics become even more important. In a basic economic sense value depends on scarcity. Essential elements which are in good supply have little value. Vitamin C has little value in breakfast cereals because it can be obtained cheaply by eating fruits or taking vitamin pills.

Values have been determined for nutrients, grain type, type of processing and other special objective factors for breakfast cereals in the U.S. Initial data in regard to expenditures, quantities purchased and nutrient intake have been obtained for rice and noodles in Japan.

Further work will concentrate on continuing specification of objective and subjective characteristics and interpretation of these within the organizational decision making framework.

A FINANCIAL COUNSELING PROTOTYPE
Implications For Use of Expert Systems Technology In Extension Programming

Claudette L. Smith, The Ohio State University[1]

The purpose of this project was to explore the potential application of experts systems technology to financial counseling as conducted within the Cooperative Extension environment.

Purpose

The major goal of Counselor 1 is to provide families with a ratio analysis of their financial statement. The advice generated by Counselor 1 is similar to that offered under similar conditions by a financial expert. The knowledge base consists of facts and rules supported by the literature on ratio analysis and financial counseling.

Prototype Development

The prototype development was accomplished in several phases. The first step was to identify literature on financial analysis using ratios as an analytical tool. In designing the prototype it was important to understand the role of ratios in financial analysis.

Assessment of the literature was the second phase. The literature suggested that an expert system designed to assist in financial advising, using ratios as the analytical tool should contain two elements: (1) client evaluation to assess the consumers financial situation and to gather additional pertinent information (2) ratio limit determination to allow the conclusions of the expert to formulated.

A review of the financial planning literature provided information for the third phase. Information obtained in this review was used to construct the data base used by Counselor 1 to draw conclusions and offer recommendations.

The final phase entailed investigating potential programming languages for Counselor 1.

Implementation and Design

Counselor 1 has two components, client evaluation and a rule base of expert knowledge.

Client Evaluation. The literature suggests that interpretation of ratios should not be based solely on the financial information used to determine the ratio (Mason & Griffith, 1988).

This part of the program addresses factors that improve the interpretation of ratio results. Information about economic environment, life cycle and client objectives are obtained. A balance sheet is used to obtain a description of the financial condition of the consumer.

Ratio Analysis. Despite the absence of sound theory, ratios are considered to be useful in analyzing various aspects of a consumers financial condition (Mason & Griffith, 1988). Financial planners, for instance, consider them valuable for evaluation of a clients financial situation (Lytton, et al., 1991).

The ratios used were adapted from those suggested by the literature as important indicators of financial position. The ratio limits used are those found in the literature and the marketplace.

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[1] Graduate Student, Department of Family Resource Management

Computer Programming. Counselor 1 was programmed using the programming language Pascal.

Implications

An expert systems program designed to help evaluate the financial position of families could be helpful to Extension Home Economist in various ways. Helping to relieve work pressure is one benefit that might be realized. It also could enhance the quality of information consumers receive in their counseling session as well as reduce time needed to prepare for the session. The system may also function as training support to fill skill gaps that exist.

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"It's One Day at a Time Because Tomorrow's Not a Promise": An audience analysis for financial management education

Josephine A. Swanson, Cornell University[1]

The design of a limited resource audience analysis study for Extension money management education and preliminary analyses of interview data were displayed. Study objectives are to: (1) develop propositions about learners, (2) use learner perspectives in program development, and (3) compare learners' perspectives to curricular themes and processes.

Sensitivity to learners and careful selection of educational processes, as well as sound financial management concepts, are important attributes of programs. Education for limited resource audiences should involve learners in program development and assess learners on the basis of credible research rather than stereotype and myth (Reaching Limited Resource Audiences 1991). Family financial management literature contains primarily a normative, analytic style of management, not practiced by most families, and not appropriate for all (Rettig and Schultz 1991). Mullis and Schnittgrund (1982) found that the majority of low income persons who said they budgeted did not have a written plan but rather an idea.

Twenty-six focus group and individual interviews were conducted with a total of 94 learners and educators. Ongoing analysis uses qualitative research principles of reducing volume, making sense, and identifying significant patterns that are grounded in the data (Strauss 1987, Patton 1990). Later, interview findings will be compared to a content analysis of curricula.

The poster displayed illustrative category quotes from transcripts and a conceptually clustered matrix. Talking about budgeting, one learner described money struggles while questioning her know-how,..."I still don't know how to budget my money, 'cause...every two weeks I get seventy dollars;...and start buyin' things that I need, by the time I think about it, all the money is gone...because I don't know how to budget it out...because I think it's such a little amount to budget out." The matrix contained patterns about education and financial management found in the perspectives of learners and educators.

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[1] Senior Extension Associate
Consumer Economics and Housing

The Concept of Consumption Community in the Modern Era

Monroe Friedman, Eastern Michigan University[1]
Piet Vanden Abeele, University of Leuven[2]
Koen De Vos, University of Leuven[3]

The concept of consumption community, first proposed by historian Daniel Boorstin, claims that in the modern era of high mobility, people look not only to neighborhood as a basis for feelings of community but also to communality of consumption behavior (e.g., drinking the same brand of beer). The idea was tested cross-nationally by administering a newly devised psychological sense of community (PSC) scale to adult respondents in Belgium and the U.S. The findings support the Boorstin thesis.

This study looks analytically and empirically at the concept of consumption community. In his social history of America, Boorstin (1973) proposed that since the Civil War advertising has been responsible for the creation of "consumption communities" consisting "of people with a feeling of shared well-being, shared risks, common interests, and common concerns. These came from consuming the same kinds of objects: from those willing to "Walk a Mile for a Camel", those who wanted "The Skin You Love to Touch", or who put faith in General Motors. The advertisers of nationally branded products constantly told their constituents that by buying their products they could join a select group, and millions of Americans were eager to join." (p. 147)

This thesis, while lacking the objective language of a social science definition, suggests that consumer usage of certain product brands and models has performed an unexpected social function by engendering feelings of community among those who share the commercial identification. Indeed, Boorstin contends that in America's increasingly immigrant society of the late 19th and early 20th century, community ties weakened leaving many individuals with painful feelings of separation from their local origins. To compensate for these feelings of loss and alienation, Boorstin claims that consumption communities formed, centered around the common brands and models of goods people buy and use.

It is these contentions of Boorstin which stimulated the empirical study reported herein. The study asks if people perceive themselves as being part of consumption communities of various types. It also asks if these self-perceptions can be reliably measured and if they behave like self-perceptions of membership in more traditional kinds of community, such as neighborhood. Finally, the study asks if these self-perceptions of community membership, sometimes called psychological sense of community (PSC), seem to serve a substitutive function, so that individuals with a weak neighborhood-based PSC have a strong consumption-based PSC.

The Approach to PSC Adopted Herein

In light of the thorny problems associated with more than two decades of scholarly efforts to come to grips conceptually with PSC, it was decided not to adopt a particular theoretical perspective as the appropriate one to guide this study. Instead, following the lead of Chavis et al. (1986) who used self-reported PSC to test the McMillan and Chavis (1986) formulation, it was decided to measure PSC by securing respondent self-reports on a six-point scale, varying in strength from the complete absence of PSC to a very strong PSC. This scale was applied to a wide variety of respondent characteristics and behaviors including neighborhood and other areas of residence, as well as demographic and consumption descriptors. Since the primary focus of the study is on consumption communities, the data analysis and interpretation deal principally with a) respondent reports of PSC for consumption items, and b) how these reports compare with those for more established forms of PSC (i.e., PSC in relation to residential neighborhoods).

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[1] Professor of Psychology

[2] Professor of Psychology and Applied Economic Sciences

[3] Graduate Research Assistant

Procedure

The Survey Instrument

A 92-item survey instrument on PSC was developed and pre-tested in English for use in the United States and Belgium. The instrument consisted primarily of self-report items each of which asked the respondent to indicate on a six-point scale how strong (or weak) a PSC he/she had in relation to a group of people with whom he/she had a certain characteristic in common. The scale ranged from 0 (the complete absence of PSC) to 5 (a very strong PSC). Intermediate values were 1 (very weak), 2 (weak) 3 (neither weak nor strong), and 4 (strong). In each instance PSC was defined as the feeling that one is part of a community when he/she thinks about his/her association with a group of people with whom he/she has a certain characteristic in common. Among the characteristics examined were ten consumption behaviors; other characteristics included geographic residence areas, demographic indicators, and several relating to family, friends and co-workers.

The consumption items consisted of an overall qualitative item (people who share your consumer lifestyle - buy the same kinds of products and services that you do) and an overall quantitative item (people who spend as much as you do on consumer products and services). The remaining eight consumption items looked at specific commodities commonly purchased in the United States and Belgium. They included living quarters, automobiles, furniture, kitchen appliances, entertainment choices (films, books etc.), clothing, household cleansers, and toiletries (toothpaste, shampoo, etc.).

Associated with each PSC item was a question relating to the certainty with which the PSC answer was given. A five-point scale was employed ranging from 1 (very uncertain) to 5 (very certain). Questions were also asked relating to the basis used by the respondent to make the PSC judgment. Three primary choices were offered here ("people I know or have known personally"; "people I have learned about in other ways"; and "people I know or have known personally, or have learned about in other ways").

Questions were included too concerning the value-expressiveness of the eight consumption items dealing with specific consumer commodities. Respondents were asked to indicate on a five-point scale the extent to which their choices of the particular commodity (e.g., clothing) express their personal values. Scale points ranged from 1 (very weakly) to 5 (very strongly).

Finally, demographic questions relating to gender, age, marital status and occupation were asked of the respondents together with questions relating to the total time they had engaged in various activities noted in the survey (e.g., time lived at current address and in same neighborhood).

The Respondents

Two groups of respondents were tested. Both groups consisted of part-time MBA students, most of whom were working full-time. The first group was associated with a Belgian university near Brussels. All instruction in the Belgian MBA program was in English and all student enrollees were fluent in English. The second group was studying at an American university near Detroit, Michigan. Both groups were volunteers who were recruited in evening and weekend classes at the business schools of the two universities. The surveys were completed during the last month of 1990 and the first few months of 1991.

Consumption Communities in Empirical Context

What do the study findings have to say about the concept of consumption communities? The question is easier to pose than to answer, partly because the concept has never been articulated with the necessary precision to permit rigorous social scientific analysis and measurement. We are presented only with some basic ideas which seem to be that consumer usage of certain product brands and models has engendered feelings of community among those who share the commercial identification, and that, in aggregate, these consumers constitute consumption communities. Boorstin also claims that the formation of these communities resulted in part from the declining importance of common geographic origins as a basis for establishing community.

Of these three basic ideas it is the first that has received the most concentrated attention in this empirical study of American and Belgian respondents. For the study asks if people in two western societies have developed PSC with regard to others who buy and use the same subclass of an individual class of consumer goods (e.g., same make and model of automobile), as well as others who share more highly aggregated consumption behaviors (consumer lifestyle and consumer expenditures).

Within the constraints commonly found in empirical research, the study results seem to suggest that such PSC's have indeed developed. The results indicate that both at the individual product class level and at the aggregate level of consumption behavior, most respondents report feeling a sense of community in relation to others who share their consumption behaviors. And the strength of sense of community they report is not markedly different from that reported for residential neighborhood, a community focus many social scientists believe to be of paramount importance in the modern era. Also supportive of the Boorstin thesis is that the PSC measures used to tap these feelings appear to be reliable and that the respondent reports are generally issued with a high degree of certainty. Encouraging too are the strong correlations found for the PSC measures with other measures, correlations which are consistent with social science theory. Particularly impressive here were the high correlations at the individual commodity level and between PSC and value expressiveness as well as the substantial correlations between the PSC consumption scale values and PSC for personal income level. Also impressive was the trend toward a difference in cognitive basis for the PSC consumption decisions as compared to PSC decisions for more traditional kinds of community (i.e., neighborhood). Since individuals in consumption communities are less likely to have contact with each other than is the case for communities of neighbors, it would be expected that consumption PSC decisions would be less likely to derive primarily from personal knowledge of other members of the community; and this indeed is what was found.

That the consumption community coin may be two-sided is suggested by other empirical findings which question the significance of the concept. Perhaps most evident in this regard are the low values for the consumption PSC's. Very few respondents in either sample reported strong or very strong PSC's at the individual product level or at the aggregate level of lifestyle and consumer expenditures. While these findings may be disappointing to advocates of the Boorstin thesis, two caveats suggest that the situation may not be as negative as it seems. The first is the low values generally found for non-consumption PSC's and especially for neighborhood PSC's - the one arena that community psychologists and sociologists have studied more extensively than any other. The second is the claim by Boorstin that consumption communities are different from residential communities in that they are unlikely to be tied together by strong links of attachment. He uses the metaphor of "gossamer webs" to suggest the weak and fragile nature of their connective tissue.

Also questioning the significance of the consumption community concept are the near-zero correlations found for both samples between consumption PSC and PSC for neighborhood. While this finding does not question the existence of the consumption community concept, it raises concerns about its ability to serve as a substitute for residential community for those who feel little or no sense of connection to their neighborhoods.

Thus the study results tend to support the Boorstin thesis by suggesting that people do indeed feel a sense of community, albeit a weak one, in relation to others with whom they share certain consumption behaviors. What is less clear from this preliminary study is that Boorstin is correct in claiming that 1) people with PSC toward the same consumption behaviors can be referred to as a consumption community, and 2) such communities can serve a psychologically substitutive function with regard to neighborhood-based communities.

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Counting the Coins: A Cross Cultural Evaluation of the Money Beliefs and Behaviors Scale

William C. Bailey, Ph.D., University of Arkansas, Fayetteville[1]
Jean Lown, Ph.D., Utah State University, Logan[2]

This is a cross cultural examination of the Money Beliefs and Behaviours Scale (MBBS) (Furnham, (1984). Using factor analysis, the MBBS in Great Britain measured six attitudes toward money. This study attempted to replicate Furnham's finding. In the U.S. the MBBS was found to measure only two statistically valid attitudes toward money--Obsession and Security/Retention. Several reasons are suggested to explain the inability to replicate Furnham's findings in the U.S.

Introduction

Despite the significance of money in Western society, few cross cultural studies have been conducted on attitudes toward money. This situation is due in part to the lack of adequate assessment instruments (Furnham and Lewis 1986). Another hinderance to comparative research in this area is the various societal taboos against studying beliefs about money (Goldberg and Lewis 1978; Krueger 1986). However, with increased international business and trade, it is imperative that researchers specializing in consumer issues begin to develop reliable and valid instruments to measure attitudes about money (Furnham 1984; Price 1968; Yamauchi and Templer 1982). In addition, there is a need for research on cross cultural variations on this important attitude (MacFadyen & MacFadyen 1986).

Cross cultural research studies of attitudes toward money should begin with societies and nations that appear to be similar in cultural values and attitudes rather than widely disparate. The societies and nations should share a common language to avoid problems in translation of previous research articles, measurement instruments, or findings of future research. They should also have corresponding economic systems, such as market capitalism, and preferably, a close historical and international trading relationship. Two nations that meet these criteria are the United States and Great Britain. This study is a cross cultural comparative evaluation of the 60-item Money Beliefs and Behaviors Scale (MBBS) which was developed in Great Britain by Furnham (1984).

Literature Review

There have been few attempts of develop a valid and reliable instrument to measure beliefs and behaviors regarding money. A few instruments were developed by individuals in the United States who were interested in the relationship between psychology and economics. They include measures such as those by Goldberg and Lewis (1978), Rubinstein (1980), and Yamauchi and Templer (1982). Few of these instruments were subjected to rigid empirical and statistical analysis. For example, the instrument produced by Goldberg and Lewis (1978) was published in a popular book with only face validity reported. Rubinstein (1980) collected data from 20,000 readers of Psychology Today; the only statistics published were percentages. The Money Attitude Scale (MAS) developed by Yamauchi and Templer (1982) was designed using factor analysis.
Adequate internal reliability of the MAS was demonstrated through statistical analysis. As far as can be determined, the MAS has not been evaluated by other researchers in an attempt to replicate the original instrument design or its findings.

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[1] Assistant Professor, Department of Home Economics

[2] Associate Professor, Home Economics and Consumer Education

Furnham (1984) developed a multifaceted instrument to measure attitudes toward money in Great Britain. He developed a 60-item Money Beliefs and Behaviors Scale by combining various items from the MAS (Yamauchi and Templer 1982), the Midas Scale (Rubinstein 1980), and from Goldberg and Lewis (1978). The 60-items were rated on a 7-point agree-disagree scale. Using a sample of 33 subjects the Alpha reliability was .84. A convenience sample of 256 British adult subjects was recruited from a variety of sources to evaluate the original 60-item instrument.

Using factor analysis with varimax rotation, Furnham (1984) identified 47 items that loaded higher than .40. Six different attributes or factors of money beliefs and behaviors were identified: Obsession, Power/Spending, Retention, Security/Conservative, Inadequate, and Effort/Ability. Obsession reflected a preoccupation with all aspects of money. The items in the subscale Power/Spending referenced the giving of money and its use as a means to control others. The Retention subscale reflected the attitudes of persons who where extremely careful with their money. The items in Security/Conservative indicated an "old fashioned approach to money" (p. 505). The items on the Inadequate subscale indicated that individuals who scored high on this scale believed they did not have enough money. The sixth subscale of Effort/Ability implied that money is gained through individual work or talent.

In the article discussing the development and analysis of the MBBS, Furnham revealed sufficient detail to allow for the replication of his study. However, Furnham only published the 47 items comprising the six factors. He included Eigenvalues and the amount of variance explained by each factor. Overall, the six factors accounted for 35% of the variance. In addition, for each of the forty-seven of the sixty original items that loaded higher than .40, he included factor loadings and mean scores. The article did not include the 13 items which failed to load higher than .40. At the request of one of the authors, Furnham provided the complete 60-item scale which formed the basis of this replicative study (personal correspondence 1988).

Previously published research in the United States has not used the original 60-item scale with adult subjects. Bailey and Gustafson (1986) used a modified 42-item version of the MBBS to examine gender and gender-role differences in attitudes toward money among college students. They also examined the relationship between personality and attitudes toward money using the same modified version of the MBBS with college students (Bailey and Gustafson 1991). Wilhelm and Varcoe (1991) used the Bailey and Gustafson (1986) form of the MBBS to examine financial well-being with an adult sample. However, since they did not have the full 60-item MBBS (Furnham 1984), there has been no previous cross cultural studies of the MBBS comparing American and British subjects and their attitudes toward money. One goal of this replication was to develop an instrument that could be used with American adults.

Purpose of Study

The purpose of this research was to replicate Furnham's original study using the full 60-item Money Beliefs and Behaviors Scale with an American sample to provide a cross cultural comparison. Specifically, the intent was to determine if the same six factors were found with American adults. Due to the paucity of valid and reliable instruments to measure the psychological meaning of money attitudes and spending behaviors, it is a significant research endeavor to attempt to develop such as scale. In addition, previous studies with the MBBS using only American college students as subjects (Bailey and Gustafson 1986; 1991) suggest there may be substantial differences American and British subjects in the factor structure of this instrument.

Methodology

Using a convenience sampling methodology, data were collected from 654 adults in three Western states. One group of subjects was recruited from a Cooperative Extension Adult Leaders school which attracted a state-wide audience. In addition, university students in personal finance classes collected data from full-time employed (non-student) adults. This sampling procedure was similar to Furham's since some of Furnham's subjects were students while others were adults recruited by students in their home towns in

England, Scotland, and Wales. The instrument was self-administered. In addition to the 60 item MBBS, various socio-demographic data were collected.

Results

Subjects

The respondents in this study were markedly different from Furnham's (1984) in a number of socio-demographic characteristics. Of the 654 subjects, 54% were male and 46% were female. Of those reporting age, 34% were 17-30 years of age, 41% between 31-50 years, and 21% were over 50 years of age. The respondents were educationally diverse with 23% with a high school diploma or less, 37% reporting some college or technical school training, and 12% college or professional degrees. Furnham (1984) used party affiliation as a determinant of political orientation. This study used a one item seven-point scale to measure political attitudes. The subjects placed themselves on a continuum ranging from one (very liberal) to seven (very conservative). The American respondents reported a rather conservative political perspective with 4.65 as the mean and 5.0 as the mode. There was a wide range of annual income in the sample with the mode being between $35,000-$49,999. The majority of the subjects were married (60%) with 21% never married, and the remaining 19% widowed, separated, or divorced. The religious affiliation was varied with 40% being members of the Church of Jesus Christ of Latter Day Saints (Mormons), 27% Protestant, 17% Catholic, 10% other, and only 5% reporting no religious affiliation. Sixty-five percent of the respondents reported full-time employment with 17% employed part-time. Only 12% of the sample were full-time homemakers with 5% of the sample retired. Table I compares the socio-demographic characteristics of the American and British samples.

Factor Analysis of the MBBS

The primary goal of the study was to determine if the MBBS created six clearly defined factors of attitudes toward money among adults in the United States similar to those reported by Furnham (1984) in Great Britain. In order to replicate as closely as possible the study conducted by Furnham, similar statistical procedures were performed.

Table 1
Comparison of Socio-Demographics of the Two Samples

		U.S.			Great Britain	
		N	%		N	%
Gender						
Males		305	54%		132	52%
Females		296	46%		124	48%
Age Groups						
17-30		228	36%		147	57%
31-50		267	41%		75	29%
50+		150	23%		34	14%
Education						
High School or Less		148	27%		43	19%
Some College or Technical		323	57%		80	36%
College Degree		80	16%		102	45%
Political Orientation	1 item scale			Party Affiliation		
1 = very liberal	1	12	2%	Liberal/ Social Democratic	35	12%
	2	21	3%			
	3	71	11%			
	4	178	28%	Labor Party	81	32%
	5	182	28%	Conservative	91	36%
7=very conservative	6	134	21%	Other	49	20%
	7	33	5%			
Income						
< $10,000		56	9%	Reported range of		
$10,000-$14,999		48	8%	£2,000 ($3000 Est. U.S.)[a]		
$15,000-$19,999		62	10%	to		
$20,000-$24,999		80	12%	£15,000 ($22,500 Est. U.S.)		
$25,000-$34,999		110	17%			
$35,000-$49,999		159	25%			
$50,000-$64,999		68	11%			
$65,000 +		55	8%			
Marital Status						
Never married		129	21%	Unmarried	122	48%
Married		376	60%	Married	94	36%
Divorced, Separated, Widowed		48	9%	Other	40	16%
Religious Affiliation						
LDS (Mormon)		261	40%	Church of England	95	37%
Protestant		171	27%	Protestant	31	12%
Catholic		113	18%	Catholic	41	16%
Other religion		33	5%	Other	12	5%
None		68	10%	Agnostic or Atheist	61	27%
Employment Status						
Full-time		421	66%	"Regular Employment"	180	70%
Part-time		109	17%			
Homemaker		76	12%	Student, Unemployed	76	30%
Retired		34	5%			

[a] Whitaker's Almanack 1984. London, p. 87. Reported that in September, 1983, the British pound was worth $1.49 American.

A factor analysis using a varimax rotation procedure was conducted on all 60-items. Only those items that loaded at .40 or higher were printed since this was the loading score selected by Furnham. This procedure failed to replicate the six factors Furnham identified in Great Britain.

An examination of Table 2 indicates the numerous differences between the factors identified in this study and those reported by Furnham (1984). Table 2 contains the items for only three factors since no items loaded at higher that .40 on Furnham's Factor 4, only one item on Factor 5, and no items on Factor 6. Additional statistical procedures were conducted to determine the internal reliability of each the three factor subscales. Tests for Cronbach's Alpha revealed adequate coefficients for exploratory research, for Factors 1 (.88) and 2 (.59), but were inadequate for Factor 3 (.11).

An examination of Factor 1 indicated that it is similar in item content to the factor Furnham entitled Obsession. Since item content is so similar, Obsession will remain this subscale's label. Individuals scoring high on this scale appear to be concerned or obsessed with all aspects of money. In addition, many of the items in this subscale appear to refer to spending behavior. An examination of the items in Factor 2 indicate a miserly attitude toward money; thus this subscale is labeled Retention/Security. There will be no further discussion of Factor 3 since the Cronbach's Alpha was too low for its use in further analysis.

Discussion

These data suggests that the Money Beliefs and Behaviors Scale does not measure the same attributes in the United States as it did in Great Britain. This conclusion was reached after factor analysis and other statistical procedures similar to those used by Furnham (1984) in Great Britain. Differences may result from a number of interrelated phenomenon.

It is theoretically possible, and maybe probable, that Americans and Britains perceive money somewhat differently. There are numerous cultural differences between the two nations including different governmental forms, class structures, educational systems, and monetary systems. As a result of these cultural differences, the British may have a broader perspective on attitudes and behaviors toward money in their lives than do Americans.

The American subjects in this study appear to perceive money as a bipolar construct. Money is either to be spent (Obsession) or to be saved (Retention/Security). There is little in between these two diametrically opposed views. However, this finding is not consistent with previous empirical research. Bailey and Gustafson (1991) used a modified version of the MBBS and found three distinctly different attitudes toward money among college students. In addition to Obsession and Retention/Security, they found that college students felt Inadequacy in relationship to money.

The most logical explanation for this variance with the current study is that college students had considerably less income and, most likely, experience with money than the subjects in this study. Yamauchi and Templer (1982) also found other perspectives on money beliefs and behaviors using American subjects.

This study conducted additional statistical analysis that Furnham did not use to examine the internal reliability of each of the subscales. Furnham did not report conducting tests for internal reliability, such as Cronbach's Alpha, on any of the subscales. The current study did measure the Cronbach's Alpha of each subscale and found the third subscale to be internally unreliable (see Table 2).

The third reason the American study did not replicate the findings of Furnham's (1984) may be related to the differences in the socio-demographics of the subjects. The American subjects are older, more likely to be married, have higher incomes, less education, are more politically conservative, and have different religious affiliations than the British subjects in Furnham's study. Previous studies such as Furnham's (1984) have suggested these socio-demographic variables are related to beliefs and behaviors regarding money.

These are only a few of the possible reasons why this study did not replicate Furnham's original six attitudes toward money using the MBBS. Cross cultural research needs to continue to examine similarities and differences among international groups on attitudes toward money and economic values. In addition, it is also apparent that a valid and reliable instrument is necessary to continue this research. This project will continue using the MBBS with subjects from other regions of the United States while expanding the ethnic representation within the sample.

The results of this study support the need for better understandings about attitudes toward money within American society. The value placed on money in western societies and by individuals within those societies makes it essential that we clarify individual and societal attitudes and behaviors toward money. In order to continue the process of developing better understandings we must have an adequate measure of these factors. This study provides a first step in developing and evaluating such a measure. Further research will facilitate the refinement of an instrument for assessing attitudes and behaviors toward money.

Table 2
Factor Analysis of the MBBS--Varimax Rotation

Item	Loading U.S.	Orig MBBS Factor	Orig Ldg
Factor 1 Obsession			
I firmly believe that money can solve all my problems.	.61	1	.46
I often use money as a weapon to control or intimidate those who frustrate me.	.60	1	.52
I feel than money is the only thing that I can really count on.	.60	1	.71
I sometimes feel superior to those who have less money than myself regardless of their ability and achievement.	.58	1	.46
I believe that a person's salary is very revealing in assessing their intelligence.	.55	1	.48
I believe that time not spent in making money is time wasted.	.55	1	.51
I sometimes buy things that I don't need or want to impress people because they are the right things to have at the time.	.54	2	.52
I sometimes "buy" friendship by being very generous with those I want to like me.	.51	2	.42
I would do practically anything legal for money if it were enough.	.50	1	.57
Factor 1 Continued:			
If I have any money left over at .42the end of the month (week) I often feel uncomfortable until it is all spent.	.49	2	
I often feel inferior to others who have more money than myself, even when I know that they have done nothing of worth to get it.	.49	1	.58
I am proud of my financial victories--pay, riches, investments, etc. and let my friends know about them.	.47	1	.58
I feel stupid if I pay more for something than a neighbor.	.47	1	.46
Most of my friends have more money than I do.	.46	5	.61
Compared to most other people that I know, I believe that I think about money much more than they do.	.46	1	.53
Every time I make a purchase I "know" people are likely to take advantage of me.	.42	---	---
Eigenvalue 6.44 Furnham's Eigenvalue 7.49			
Variance 10.7% Furnham's Variance 12.5%			
Factor 2 Retention/Security			
I prefer to save money because I'm never sure when things will collapse and I'll need cash.	.61	3	.42
I know almost to the penny how much money I have in my purse, wallet or pocket at all times.	.50	4	.50
I don't like to borrow money from others (except banks) unless I absolutely have to.	.48	---	---
I often say "I can't afford it" whether I can or not.	.47	3	.64
In making any purchase, for any purpose, my first consideration is	.44	1	.46

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cost.			
Even when I have sufficient money I often feel guilty about spending money on necessities like clothes, etc.	.43	3	.59
Eigenvalue 3.57 Variance 6.0%	Furnham's Eigenvalue 3.97 Furnham's Variance 6.6%		
Factor 3			
I am better off than most of my friends think.	-.50	5	-.53
I often feel inferior to others who have more money than myself, even when I know that they have done nothing of worth to get it. (Double load from Factor 1)	.45	1	.49
Most of my friends have less money than I do.	-.47	---	---
I am worse off than most of my friends think.	.43	5	.56
When a person owes me money, I am afraid to ask for it.	.42	---	---

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Environmental Constraints in Consumption

K. Slater, University of Guelph, Ontario, Canada[1]

Concern about overpopulation, resource depletion and pollution stems from our response to population growth as we strive for better living standards without regard for the earth's welfare.

This paper refutes the belief that science can solve planetary problems, shows that faith in our ability to eliminate pollution is a delusion, and casts doubts on the value of new energy sources or recycling. Instead, it proposes a new outlook in attitudes to consumption, in direct conflict with traditions, particularly relating to marketing practice.

Introduction

Current concerns about the future of the planet are too familiar to need amplification. The problems of overpopulation, resource depletion and pollution are discussed regularly in both scientific and popular literature, and the potentially damaging effects of global warming, ozone depletion, acid rain, water pollution, deforestation or other flaws in the ecosystem are well enough known for us to acknowledge their relevance in modern society.

It is generally accepted that population control is a fundamental need in trying to find a solution to the world's ills, though a more important root cause, the response of humanity to rapidly rising population levels, is less openly acknowledged, possibly for political reasons. The correlation between growth in population and environmentally-damaging pollution is a clear one, from historical evidence and by simple logic, yet we appear reluctant to admit, as a species, that any attempt to control planetary decline must involve new ways of thinking.

In the past, we have placed too much emphasis on traditional means of attacking population, resource depletion and pollution problems. We have concentrated on the search for new energy sources, the redistribution of wealth, or the reliance on rational argument, common sense or education. Close examination of our attitudes from an analytical scientific standpoint, however, reveals that these efforts, and the more recent ones such as recycling, are not only ultimately doomed to failure but can compound the severity of the situation.

Population and Consumption

If we examine the relationship between population and consumption, we find the oft-quoted idea (Corson, 1990; Jørgensen and Johnson, 1989) that a few areas of the world, comprising North America, Australia, Japan and Europe, contain less than 25% of the earth's population but consume 80 to 90% of its resources. If we take account of typical wealth and consumption distribution patterns in these regions, it follows that the "top" 10% of the population of the planet (that is, the heaviest consumers) are using up at least 80% of the world's resources. If we assume, in round figures, that there are five billion inhabitants on earth, this means that a mere five hundred million people are responsible for this consumption. Thus, if we try to share planetary wealth by universally increasing living standards to that of the top 10%, rather than limiting our distribution to the resources currently available, simple mathematical calculation tells us that the planet can only tolerate 625 million people at this level of consumption. Conversely, we can reduce our lifestyle to match the average of the 90% of the inhabitants consuming only 20% of the planetary resources. If we do that, then 22.5 billion people could live on the earth without exceeding current levels of resource depletion or pollution.

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[1] Professor, School of Engineering and Department of Consumer Studies

Thus, we can establish, in theory, some kind of empirical relationship between population and permissible lifestyle. In order to do so, we need to examine carefully factors governing the interdependence of the two, looking at the limit situations, when automation is either totally universal or totally absent, respectively. If the world ever reaches the stage when everything is done by machine, its inhabitants will be part of a society where the presence or absence of a few million extra bodies makes virtually no difference to the planet, because all the resource depletion and pollution (apart from the relatively minor component needed to provide subsistence existence for people) will result from the use of machines operated by a small proportion of the human race for the development of added luxuries or comfort to be enjoyed by the species as a whole. In addition, if we want a stable planet, we shall have to make sure that pollution production remains below a level lower than that existing today. The combination of these two factors leads to an estimate that a fully-automated planet would probably be unable to cope with more than, say, 25 million inhabitants.

On the other hand, if we abandon all machinery and become totally dependent on our own unaided resources, then the earth can cope with many more people. In the limit, with no artificial aids to agriculture, no medical technology, no industry, no energy sources except manual- or animal-driven ones, no power-driven means of transportation, no communications and (probably) no national or centralised governments, an estimated fifty or one hundred billion people could live on earth, with the upper limit governed by some external factor, such as lower life expectancy or food-growing space or the greenhouse effect from their fires.

There are signs that we are beginning to appreciate in some small ways the dangers of our wasteful behaviour in potentially causing planetary exhaustion. Politicians, for example, speak of plans to protect the environment, but they are only prepared to implement them if the economy does not suffer as a result. It is, though, clearly impossible to reduce manufacturing capability to save the planet without harming the economy. We hear the current catch-phrase of "sustainable development" bandied round, but this is an oxymoron, since development implies continuous expansion, which cannot be prolonged indefinitely without sacrificing the environment in some manner.

An alternative possibility to be considered is that modern (by which we mean Western) thinking will allow all the countries of the earth to reach the lifestyle of the developed nations. Present-day economic theory tells us that the lack of a decent living standard in the Third World is caused by the fact that there is insufficient employment there. There is therefore a pursuit of capital in underdeveloped countries, because its acquisition will give them riches, and hence a better life. Thus, in theory, if we redistribute all the available wealth evenly to all parts of the world, there will be more work and hence higher living standards in the poorer parts of the planet.

Unfortunately, this theory does not seem to be working. As discussed earlier, there is not enough "wealth" (defined in terms of the products obtainable by resource consumption) on the planet to enable all of humanity to achieve the lifestyle currently enjoyed by the more affluent nations. People in the Western world, too, are reluctant to commit a fair share of what is actually available to those in developing countries, mainly for reasons of human selfishness. Even where some aid is provided, there is no guarantee that it will reach the people in need of it. Government officials may be corrupt, or powerless to organise efficient distribution (especially of food) to remote parts of the country before supplies are lost to black marketeers, terrorists or by natural factors. In addition, there are often problems of compatibility, stemming from religious or cultural objections, to the type of aid sent. Finally in this respect is the sad but true fact that aid often enhances the suffering of a poor country. Its provision enables, and sometimes encourages, population growth to continue (or even accelerate), so that the initial problem of a shortage of food, or work, worsens in consequence. If, as is unfortunately the historical case, the survivors saved by the aid produce children, the suffering is likely to be compounded many times over twenty years later.

It is possible, by making reasonable assumptions, to estimate the approximate effect of population and consumption growth factors. In the last two decades, there has been a fourfold increase in the impact of North American consumption on the environment (Jørgensen and Johnson, 1989) and, since a similar figure can be assumed for the other members of the world's "top" 10% consumers, we can assume (with a margin for safety to allow for probable over-consumption at the beginning of this period) that the human race is producing about five times as much pollution as a healthy planet can tolerate. We can thus postulate that five billion people are consuming resources at a rate which could only be sustained by about one billion with the equivalent consumption distribution pattern. Thus, we need to make some very careful decisions in the near future. We are faced, in short, with a choice of either drastically reducing our population, or lowering our Western lifestyle, or throwing away our planet. Current predictions are that, in about 35 years, the earth's population will double (Barney, 1980). If we hope to maintain the same social support systems as at present, it follows that the need for food, water, clothing, housing, fuel, schools, hospitals, and all the other requirements on which human beings depend will also double. The biggest population increases, 90% of the total, are unfortunately taking place precisely where extra mouths to feed can least be tolerated, in the Third World (Eisenbud, 1978; Mungall and McLaren, 1990), so that the need for these services will be considerably more than doubled if we hope to expand them to a greater proportion of the earth's inhabitants.

Population and Consumption Reduction

If we seriously want to save the planet, then, we either have to cut down our lifestyle or reduce our population. All indications at present, though, are that we are increasing both. Our attempts to achieve the latter alternative are ineffective, for a variety of reasons, under present social mores. The grim possibility of either drastically reducing birth rate (by such means as compulsory abortion, birth control or sterilisation, for instance) or drastically increasing death rate (by compulsory euthanasia of selected members of the population, for example) would prove unacceptable to most societies today, especially in view of the enormous decrease needed in numbers for such control to be effective in planetary salvation.

We are thus left with the reduction of consumption as the only real alternative to sacrifice of the planet. As one of the driving forces behind consumption, therefore, marketing may well become a focus for the need to change radically our ways of thinking. Techniques previously used for reducing consumption include some form of rationing or taxation, either of a voluntary kind or through regulation. We have always tended to shun this solution except as a last resort, again because of such human traits as selfishness or greed, preferring instead to rely on new technology to solve the planetary problems. This illusion is easily shattered, unfortunately, as a realistic engineering analysis of these hopes, exemplified in pollution disposal, the search for new energy sources, and recycling, can demonstrate.

Our supposed efforts to rid our environment of garbage are, in fact, merely exercises in hiding, transforming or disguising pollution. We get rid of visual pollution by burning the objectionable material, but produce harmful gases in the process. We "scrub" exhaust gases to reduce industrial air pollution, but we then have to dispose of an acidic or salt solution which is potentially fatal to plant growth. We bury toxic materials, but they leach into the water supply.

At the same time as we delude ourselves into believing we are curing our pollution problems, we rail against the decline in air, water or land quality. Our protests, though, are invariably identifiable as merely thinly-disguised selfishness for the human species, not for the planet. We hear, for example, of complaints about heavy metal contamination, deforestation and air or water pollution, yet closer inspection reveals the true causes of our concern. The reason why we are so adamant that lead, mercury and other heavy metals must be eliminated is not just that they can kill birds or animals, but that the birds and animals then get into the food chain and eventually kill people. The loss of rain forests, changing the climate, is denigrated not because the planet will suffer, but because human communities will be destroyed by the global warming effect. The ozone layer depletion is disastrous not because it will wipe out irreplaceable species, but because it will allow an increase in the cosmic radiation reaching earth, with a consequent rise in the number of deaths from cancer. The pollution of our waters by sewage and other refuse is a crime not because of the fish which are dying, but because fishermen are losing their livelihood as a result of depleted stocks and because the dead fish are unsafe to eat by humans.

The main hopes stemming from scientific or technological advances, the development of new energy sources which are being actively sought at present, are destined to failure on several grounds, but mainly as a result of the environmental cost of production. No potential new energy source can ever meet the continually increasing demands for power, for reasons which emerge only too clearly from logical analysis. All of the possibilities depend in some way on factors which cannot be included without some shift along the path to planetary destruction. Nuclear energy, for instance, produces toxic wastes, is heavily energy-dependent in development, and causes visual pollution in the form of mine tailings. Reservations about development and visual pollution apply also to suggestions for harnessing power from the sun, wind or tides; despite their enormous potential for supplying energy, comparable limitations can be identified. Added to this is the fact that conversion efficiency to electrical energy is relatively low, so that collectors have to occupy very large areas, introducing problems of space limitation and more visual pollution. In addition, electrical energy (the only feasible way of making these natural sources conveniently usable) cannot easily be stored, so has to be distributed by an unsightly grid system over a large area. For solar energy, too, any successful gathering is limited to daylight hours, when demand for electricity is usually at its minimum.

The most critical defect in any new energy source, though, is the matter of containment. The energy produced from nuclear reactions or sunlight or water or wind needs to be trapped in some form of container, and its concentration reduced (in the case of nuclear or solar energy) to the point where the collector will not melt as a result of containment. At present, there is no material capable of achieving this aim on a scale large enough to cope with the planet's energy demands. Even if one were to be discovered, its financial price would be astronomic and the environmental cost of producing the high-temperature-resistant container from mineral sources which are either rare or difficult to extract could not be met without some tendency towards sacrificing the planet once again.

The other major idea proposed to "cure" environmental difficulties is that of recycling. What this admittedly does, in essence, is reduce to some extent the consumption of natural mineral resources, but critical examination of the process reveals the fact that it inevitably uses up different kinds of resources and causes pollution. It combines an intensive consumption of energy and oxygen with the release of carbon dioxide, the main culprit in global warming, as an undesirable by-product, so is ineffective as a long-term solution. In particular, metal recycling can never be completely successful, because rusting can only be reversed by complex (and environmentally-destructive) reactions which, once again, almost always also involve the use of carbon, releasing carbon dioxide or other gases as polluting by-products into the atmosphere.

Planetary Needs

The inescapable conclusion is that, if we wish to save our planet, we must reduce consumption, especially in the Western world. This is diametrically opposed to all current economic doctrine, which presupposes a need to increase consumption to sustain market forces and hence financial well-being. The control of population, resource depletion and pollution, if it is attempted, will have to be carried out by observing rules for planetary survival, which can be summarised simply, in logical order.

The first of these is that the planet is more important than any of its inhabitants, a self-evident requirement. If there is no planet, there can be no inhabitants, so any discussion of a future in which our planet is not surviving in a healthy state is purely academic from the human perspective.

The second is that a species is more important than any individual in it, a fact which, if the rule is adopted, imposes on us the need to sacrifice some of our rights as individuals for the greater good of the human race as a whole. The intent would clearly be opposed by virtually all the religious teachings to which we are exposed, since it contains the implicit assumption that we may eventually have to decide to eliminate some members of the human race before their natural life span has expired, when they begin to consume resources too heavily without contributing to planetary well-being.

Thirdly, each species is of equal importance. We have totally ignored this obligation in our thoughtless subjugation of the world's resources. In our relentless pursuit of luxury, we are impervious to daily press reports that tell us we are wiping out species by destroying rain forests, by polluting our water, and by hunting animals for food or economic gain. We are just beginning to appreciate the fact that we do not yet understand the complex workings of Nature well enough to condemn any species, no matter how unpleasant we find it, to extinction, but this knowledge will arrive too late to save many co-inhabitants of the earth. In a few cases, we even unthinkingly accept the implications of the rule. The mutual dependence of a blind person and a guide dog, or a pet animal and the compnaionship it provides for its elderly owner are cases in point.

Fourthly, all individuals of a species are not of equal importance, a rule which again, at least on the surface, appears to contradict all our social conditioning. It presupposes that some people will have to suffer restrictions since, if we fail to control unlimited individualism, we cannot expect human beings to abandon willingly their rights to a luxurious lifestyle. On close inspection, we find that we are already following this rule. We place specific members of the race, such as royalty, pop stars, or personalities in sport, in a position of eminence, paying them exorbitant salaries out of all proportion to their true value to the planet or to society. At the same time, we happily condemn 20% of the world's population to live in near-starvation conditions (Corson, 1990).

Finally, all individuals of a species should have equal opportunities. This follows from the previous rule since, if we do not grant equal importance to all individuals, we must provide an equal chance for each person to develop his or her abilities to the full, in order to avoid potentially destructive unrest in those members of society denied a fair chance of the success enjoyed by others. It is important to stress that any solution to the impending demise of the world as we know it will have to be based on some kind of international leadership, with identical opportunities and equitable conditions imposed on all parts of the planet, to avoid envy and its resulting struggle for betterment.

In considering the possibility of adopting these rules, two vital factors should be taken into account. First, we should note that all of them are followed implicitly by all species in Nature, with the sole exception of our own. Secondly, as implied in the comments accompanying them, we should bear in mind that the rules already govern the lives of a major proportion of the inhabitants of the planet. It would be hypocritical of us to refuse to allow them to be imposed on all members of the human race merely to prolong the position of advantage currently enjoyed by the wealthier nations.

Clearly, though, the rules as quoted, if applied to their logical conclusion, will bring us into direct opposition with most of the ideas cherished in virtually all societies, religious groups, legal codes, economic theories and other human institutions accepted today. They will drastically alter, in particular, our industrialised, Western, way of life, and a brief examination of the adjustments needed in the area of marketing can be carried out in an effort to illustrate the enormity of the changes typically to be made in all sectors of our modern society.

Effects on Western Lifestyle

The major Western contribution to an improved planet would, of necessity, be an acceptance of lower living standards. This would require strong political will, a new approach to education, and changes in all the societal traditions. It is, for instance, obvious that no political party campaigning on a platform of reduced consumption, with consequent limitation of goods available, could hope to be elected to power. It would be necessary for an all-party agreement, with arrangements for equitable sharing of the reduced benefits available, to be made before the idea would have any possibility of being accepted. Legal, moral, religious and other social scruples would also be difficult to overcome, especially if any attempt to control population by compulsion were to be added to the erosion of current individual rights of citizens to consume without restriction.

In the area of marketing, involving as it would a deliberate attempt to reduce, rather than increase, consumption, the changes needed would be especially devastating. Reduction in consumption would lead to vast unemployment, both in production and in marketing areas. Efforts would be directed not only to a reduction in the polluting effects of processes, an aim which is just beginning to affect manufacturers, but also to a deliberate and large-scale decision to cut down production. It is only too apparent, when economic factors bring about this type of change, how much misery is produced in a developed nation, and we are currently seeing the results of this misery in former Socialist republics suddenly thrust into a free-market economy.

Two major corollaries would be the abandonment of financial motivation and the near-elimination of advertising, both of which are important driving forces in consumption. It would be necessary, presumably by government intervention in the market place, to remove (either completely or at least partially) the profit motivation from manufacturers, retailers and other market segments, so that the incentive for constant increase in sales would be lost. It may even be necessary to eliminate the credibility of money itself, a process which many observers feel is well on the way to becoming a reality with the advent of cashless, credit-card-using societies. It is worth noting that, of the three reasons for using money (the purchase of necessities, the acquisition of luxury, and the control of other human beings), only the first is a valid one in the context of planetary and species preservation. In a future society, perhaps, some kind of quota system will have to be imposed on consumers to prevent unlimited shopping sprees from defeating the goal of environmental restraint.

The first problem for such a system is to identify the needs and luxuries of a society. Strictly speaking, the only necessities for life (as evidenced by the fact that people are currently surviving on them) are clean air continuously, clean water daily and food occasionally. In addition, we can regard protection against the elements as a necessity at our present state of development, since we have lost the ability of our ancestors to survive without shelter and clothing. All else is luxury, from the viewpoint of Nature, though it would be a brave fool who would dare to suggest restricting all of humanity to have just these aids to life with nothing more. What is needed is to examine the "luxuries" of life to see just which ones are "valid" and which are "unfair" from the planetary perspective. Thus, for instance, it is reasonable to ask for tap water, a house which is warm enough, clothing, emergency surgery in life-threatening situations, public transport, or holidays, but it is not reasonable to expect as a right unlimited pure water for washing and flushing toilets, a luxurious or second home, air-conditioning, an extensive wardrobe, cosmetic surgery, a private car or foreign travel. Thses are all possessions or "mental-health needs" which we have grown accustomed to demand, mainly because of pressure placed on us by the expectations of modern society.

In particular, if we are to reduce our consumption, the use of advertising would have to be curtailed severely. Without regard for its actual effectiveness in accomplishing its aim, a factor constantly under review by the advertising industry itself, it is reasonable to point out that, if advertising did not work, it would be pointless to employ it. Yet there can be no question about the adverse environmental effects which virtually all advertising produces. There are statistics, incomplete but nevertheless telling ones, which reveal how much paper (and other resources in the form of metal or plastic) is needed for the purposes of advertising. We are told that 77,000 trees are required to make the paper for a single day's issue of a newspaper (Mungall & McLaren, 1990). Even if this paper is not produced by deforestation, it involves energy-costly and polluting recycling. The paper consumed in printing all the newspapers and magazines of the world on a regular basis must be enormous (Wilson, 1984). Since a major source of revenue for any newspaper is its advertising, it must account for a significant proportion of this paper use. If we then add the paper used in all the other forms of advertising, together with that needed for administrative activities, it is obvious that the environmental cost of this occupation is enormous.

In addition, successful advertising, by its very nature, increases the demand for goods. This increase, which can be correlated directly with increased resource consumption and pollution derived from the manufacture of products, can also thus be traced to the result of advertising activity. The demand for more modern goods of superior quality, too, can be a major factor in, for instance, the process of tropical deforestation of exotic trees and of premature dumping of unwanted, though still serviceable, discarded goods. Packaging, accounting annually for 52.3 million tons of paper in the U.S.A. in the past (Nobile and Deedy, 1972) and showing no tangible signs of decreasing, adds still more to the burden of the planet in trying to respond to the pressures of advertising.

There are, too, other environmental costs associated with advertising. The need to build, light, heat and otherwise service premises used for the trade must not be forgotten. Nor must the need to transport supplies to the premises, the products of the advertisers's efforts to market, or people to and from their workplace. Added components used by modern companies will account for more resource consumption; colouring agents, computers, telephones, fax machines and all the paraphernalia of a modern business all add to the environmental load for which advertising is ultimately responsible.

If a serious attempt to reduce consumption is to be made, then, present advertising practices will have to be abandoned, or at least seriously curtailed. They could, perhaps, be replaced by consumer-controlled (rather than producer-controlled) advertising. Electronic lists of goods, selected by the consumer when replacement of an item became necessary instead of from continuous exposure, would allow some degree of market diversity without exerting undue pressure either on prospective buyers or the ecosystem. It would be a challenge for advertisers to present their information in such a way that a potential consumer, searching electronically for goods, would be attracted at first encounter to a specific item, and would then become involved in the quest for more detailed information by continually asking for it to be presented on additional "pages" of the computer screen where the advertiser described the particular item.

This scenario, then, is one which will eventually be imposed on the human species if the earth is to survive relatively unscathed. Reasoned debate leads most informed observers to speculate that our race has between twenty and one hundred years to alter its hedonistic lifestyle before it is too late to save the planet. When the truth is brought home to us, and we are forced to change our living standard expectations, the marketing sector will be hard hit by new, earth-saving, regulations. It is only reasonable that those people responsible for developing marketing policy should begin, as soon as possible, to make their plans, in readiness for the time when the new reality is forced upon them.

Conclusions

The environmental problems affecting the earth at present will not be solved by scientific measures or technological innovation. New forms of energy cannot be expected to meet the rising demand, nor can recycling ever be a long-term means of avoiding planetary damage. The only satisfactory method of preventing global destruction by pollution is through rigorous enforcement of planetary laws which significantly reduce the importance of individuals and of the human species. Their adoption will, of necessity, change lifestyles, particularly in the Western world, and the marketing sector will be especially hard hit. New ways of thinking, aimed at actively reducing production and advertising, will have to be adopted. If the advertising industry hopes to meet the challenge, it should begin the process of planning its future strategies at once.

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Consumer Interest of Minority Market Segments and Marketplace Problems

Thelma Snuggs, Purdue University[1]

The United States stands at the brink of an ethnic revolution. If the growth for minorities continue, "minority consumers" will become "majority Consumers" in the next century. Factual information about these minority consumer segments must be used by both the public and private sectors in formulate strategies to effectively meet the needs of these consumers.

Minority Markets Define the Consumer of the 21st Century

The United States stands at the brink of an ethnic revolution. If the growth for minorities continue as projected into the next century, it is predicted that "minority consumers" will become "majority consumers."

Minority consumers are the dominant market for retail goods and services in many cities now. By the year 2000 it is projected that they will constitute a majority of the population in one third of the nation's fifty largest cities. The fact is that we do not have to appeal to the future for understanding the importance of minority markets. The top three minority markets (African-Americans, Hispanics and Asians) represent nearly a 300 billion dollar market now according to Deloitte and Touche and Impact Resources (1990).

Minority consumers are an opportunity waiting to happen. In an arena of increased saturation and competitiveness, the existence of an untapped major consumer market should become a beacon for major consumer goods and services.

Demographic Trends - The Percentage of the White Population is Declining and Minority Consumer Markets are Emerging.

Minority consumers are growing at a faster rate than non-minorities.

Facts:

1. The traditional "white Majority" is rapidly losing its majority status within the overall U.S. population. The most rapid growth in the U.S. population is occurring for ethnic minority groups.
2. By 2010, non-Hispanic whites may comprise only two-thirds of the total U.S. populations (down from 1980 proportion of 80%), and 2020, only about half (50%) of the total population.
3. Preliminary figures from the 1990 census reveal that racial changes are transforming the nation much more rapidly than expected... In 1980, non-Hispanic whites represented a majority in six of the 10 biggest cities in the country; today, they are a majority in only three. (Shell and Lisack,1991).

Minority Markets Are Emerging.

Minority consumer segments are experiencing rapid growth rates which the country cannot ignore.

Table 1
Size and Growth Rate of the Three Largest Ethnic Markets.

African-American Market

Size: 30.8 Million (1989)

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[1] Coordinator, Retail Management
Consumer Sciences and Retailing

12% of U.S. Population

Growth Rate: 3 times the white population rate

Hispanic-American Market

Size: 22.35 Million (1989)
9% of U.S. Population

Growth Rate: 9 times the white population rate

50% are immigrants, and the majority are under 25 years of age.

Asian-American

Size: 3.73 Million (1980)

Growth Rate: Fastest Growing group in 1985, now the second fastest group.

70% are immigrants, and the majority are under 25 years of age.

Minority Consumer Segments are Profitable.

Minority consumers have a need for a wide variety of products and services, and the income to purchase them. These consumers represent attractive markets for businesses.

Table 2
The Purchasing Power of Minority Consumer markets.

African-American	255 Billion	(1991)
Hispanic-American	170 Billion	(1990)
Asian-American	35 Billion	(1990)

Source: Deloitte & Touche & Impact Resources 1990. Zakian, 1990.

Minority Consumer Segments are Untapped Markets.

Minority consumers have substantial buying power, a willingness to buy and a need for a variety of products and services. Although minority markets are not without risks, consumers are underserved and thus represent a fertile target market for companies. Yet, few marketers have aggressively targeted these consumer segments.

Problems Faced By Minorities in The Marketplace

Some marketers have overlooked minority markets or are making decisions based upon misinformation. There are numerous myths about minority consumers, but here we will only discuss four.

Myth 1: Minority consumers and white consumers are the same. Therefore no customized marketing approach is needed to reach minority consumer segments.

Fact: White it is true that all humans have the same basic needs for existence, cultural and social differences do exist.

All ethnic groups want to see themselves portrayed as positive members of the American society. All ethnic groups place great value on their family ties, wish to live in a good home and neighborhood, be accepted by their peers, wish to preserve their native culture and language and place great emphasis on education and achievement.

But, differences do exist among the three largest ethnic minority groups with respect the language, family roles, shopping behavior, media usage, etc. All of these factors affect the buying and purchasing behavior of consumers.

Myth 2: Minorities are monolithic groups.

Fact: Each of the three minority segments are made up of very distinct sub-populations just as with the majority society. Therefore, a customized marketing approach will be needed that is consistent with cultural and social norms for products and services. A standardized advertising strategy of substituting in Black, Hispanic and Asian models will not necessarily be appropriate.

Myth 3: Minority Segments are low-income consumers.

A myth held by some marketers is that minority consumers, especially Blacks and

Hispanics have little discretionary income.

Fact: There is a substantial and growing black middle class that has been overshadowed by the perpetuated image of the low-income black. Hispanics are also economically diverse. American Demographics (1989) reported that approximately 10 percent of black families had annual incomes of over $50,000 in 1987 and over 2 million adult blacks live in affluent households (O'Hare 1989). Cuban Americans had $26,800, Central and South Americans has $22,200 and Mexican Americans has $19,300 in 1986 according to American Demographics (1988).

Myth 4: Minority marketing is a passing fad.

Fact: Minority consumer segments are growing at a faster rate than the White population. Therefore, one has to only look at demographic trends and projections for the population and the labor force to know the fallacy of this argument.

Recommended Directions for Consumer Education, Policy and Research Programs

What should be done to effectively serve the needs of minority consumer segments? The blueprint for change:

1. U.S. marketers must rely on research and not myths and misconceptions about minority consumers.

2. Consumer education brochures, shopping guides, consumer response cards, credit card applications etc. must be in a language form understandable to ethnic minority segments. There must be people who speak the language of minority segments on 800 numbers, behind service desks, serving as sales associates, sales representatives, and in top managerial positions. Companies must employ or seek out firms with expertise on the selected minority segment for marketing and advertising campaigns. Some companies are even setting up minority marketing departments, either as a separate or as a joint section of their marketing departments, or forming ethnic marketing teams.

3. More cultural education and sensitivity training is needed for members of the public and private sectors so they can effectively deal with minority consumers in the marketplace and in the workforce.

Here are some select comments on the African American, Hispanic and Asian consumers from retailing students in my multi-cultural marketing and retail class at both the graduate and undergraduate levels.

Table 3
Comments from Undergraduate Students on Ethnic Minority Segments

AFRICAN-AMERICANS

Good Dancer
Welfare
Use Slang
Like B.B.Q.
Like Chicken
Sensitive about Racial Issues
Close Unit
Like Large Cars
Female has Power in Family
Wear Colorful Clothes
Greater Sex Drive
Lots of Kids
Smile a Lot
Fat
Drugs

HISPANICS

Religious
Large Number of Migrant Workers
Don't Want to Learn English
Close Family Ties
Friendly
Large Number of Children
Love to Cook and Eat
Fat (Women)
Hot Spicy Foods
Drugs

ASIANS

Good at Math
Strong Family Traditions
Like to Save Money
Friendly
Easy Going
Non-Aggressive

Introverted
Japs
Healthy
Own Restaurants/Grocery Stores

Table 4
Selected Comments From Graduate Students

AFRICAN-AMERICANS

Very dark brown skin
Larger noses
Loud, boisterous
Laid back, Easy going
Kinky hair
Strive for equality, yet segregate themselves
Worried with physical appearance
Frustrated
Need for revenge
Artistic, Musical
Athletic
Sloppy

HISPANICS

Many speak Spanish
Light brown skin
Poor, Rude
Lively, Talkative
Usually smaller framed physically
Curvaceous bodies
May have children hanging around them

ASIANS

Dark, yellow skin
Straight course hair
Rounded faces, Squinty eyes
No bridge on the nose
Respectful, Considerate
Shorter, generally (<5'10")
Clannish behavior
traditional cultural values
Dedicated to education
Treat women poorly (by U.S. standards)
Good copiers
Sneaky
Unclean (in food prep.)
Talk in circles

The stereotypes and generalization held by these students will affect their management and service behavior to these minority consumers. If you were a CEO, would you want your front line people working with minority consumers or workers believing they have a "greater sex drive" as just an example.

Also included are survey results from a recent study on the shopping experiences of minority consumers in retail stores and malls.

- 78% believed that Black consumers do not receive the same level of service as White consumers in retail stores.
- 65% believed that sales clerks give preferential treatment to White consumers over minority consumers.
- 77% believed that sales people often assume that minority consumers cannot afford to buy expensive products.
- 43% believed that sales help often steer minority consumers to cheap merchandise rather than more expensive merchandise.

Research Needs

More research should be done on the Black, Hispanic and Asian markets to identify the specific subsegments within each ethnic group and to compare and contrast their purchase behaviors.

Most research on minority consumers has dealt with "how" they behave rather than "Why" they behave as they do. Emphasis should be places on explaining rather than describing behavior.

Conclusion:

Minority segments are receptive to a wide variety of products and services such as financial services, life insurance, upscale products/services, etc. (Deloitte and Touche and Impact Resources, 1991). They seek products from companies that show a sensitivity to their culture, values, and lifestyles.

Such sensitivity and understanding will require businesses and those that train individuals to work in these businesses to develop new attitudes and marketing approaches to sell their goods and services, and to develop loyal customers within minority markets. Be aware that I am not advocating that businesses do anything different to minority markets than for majority markets. Understanding your target market is the foundation of all marketing. Marketers will actually have no choice but to think in multi-cultural terms in the 21st Century and beyond, because it will be crystal clear by then that minority markets are a significant source of profit.

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The Federal Government Promotes Minority Consumer Outreach

Juanita Yates, Associate Director[1]

America's strength is rooted in its diversity, a fact to which our long history bears witness and to which our nation's motto provides testimony: E pluribus unum (One from Many). According to Census Bureau projections, by the year 2000, more than a quarter of all Americans will be African Americans, Hispanics Asians and Native Americans.

In recognition of the rapidly growing minority population, the United States Office of Consumer Affairs (USOCA) sponsored a National Symposium on Minority Consumer Issues at the White House during our 1990 celebration of National Consumers Week. More than 100 leaders of minority, civic, fraternal, educational, consumer and religious organizations participated. The Symposium was designed to identify government and private sector resources; provide current information on consumer legislation and regulations; provide consumer education publications and other materials; and encourage citizen participation in rulemaking which impacts on consumers.

In response to the Consumer Federation of America's 1990 Consumer Competency Survey which found disturbingly low levels of essential consumer knowledge among minority citizens, USOCA renewed its efforts to address the marketplace concerns of minority communities, who have traditionally been underserved by conventional consumer education methods.

During 1991, USOCA convened two meetings with representatives of national and community based minority organizations or CBO's, to identify major issues of importance to minority consumers and recommend strategies for improving the delivery of consumer information to African American, Hispanic, Asian and Native American communities.

My office prepared a report on the meetings with a list of the issues and strategies raised by the minority leaders. However, their message to us was clear; we were not doing enough to break barriers of language and culture. The participants called upon government officials, educators and business and industry leaders to become sensitive to their varied interests, educational needs, lifestyles, expectations and cultural diversity.

In short, the minority leaders told us to build coalitions and work cooperatively with churches, schools, and community based organizations that are already in place. They also said that we should use minority-oriented media and information dissemiation specialists with special insight and sensitivity to ensure that a program or message is relevant and addresses the needs and problems of minority consumers.

Initiatives for Minority Consumers

One of the major recommendations was that we convene Minority Consumer Dialogues in major cities around the country with the assistance of local agencies which actually resolve consumer problems. The Dialogues could give the CBO's more information on getting their constituents' consumer problems resolved. At the same time, agency managers could learn from the CBO leaders how to serve minority communities more effectively. This problem-solving approach could create the confidence and cooperation essential to improving consumer education in minority communities.

I am pleased to report that our first Dialogue will be held April 23 in San Francisco. Our cosponsors will be the California Department of Consumer Affairs, Consumer Federation of America, and Consumer Action of San Francisco. In this Dialogue, the community leaders will set the agenda. Our invitation included a proposed list of issues and asked CBO leaders to rank the issues in order of importance to their communities. We encouraged them to add to the list if necessary. The results will tell us which complaint-handling agency representatives to invite.

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[1] Special Concerns United States Office of Consumer Affairs

Our goal is to create a partnership between the CBOs and the agencies. The minority consumer groups will convey to the regulators how they can better communicate with their communities. And the agency managers can explain how the CBO's and their constituents can get effective assistance from their agencies. Every community is different, of course, but we hope to adapt this same "model" approach in convening other Dialogues.

Our other initiatives for minority consumers include:

- Producing and distributing radio consumer information spots targeted to minority communities. Radio offers an inexpensive way to reach some minority populations which we have found are not reached effectively by the print media.

- With input from minority affairs contacts in each of the Federal agencies, USOCA is compiling a list of minority-oriented radio and television stations and newspapers and magazines located around the country. We will send them our publications, newsletters and public service announcements. We will also share the list with other Federal agencies.

- The problems minority consumers experience with financial services is an especially timely issue and one of major importance to USOCA. Although other Federal agencies-- and the Congress, as well-- are grappling with the heavy burden of reforming and restorating the nation's banking system, USOCA is concerned about the impact of the situation on consumers. We have held discussions with leaders in the banking industry, with Federal regulators, and with consumer groups on how to educate consumers, about the financial services marketplace, especially minority consumers. We believe that consumer education can play a beneficial role for minority consumers who as a group, experience a high rate of loan denials. We are, therefore, exploring opportunities to work with government, the private sector, and community organizations in launching an education campaign designed to help educate minority consumers on the criteria banks use for approving loan applications, and how to position one's financial situation most favorably before making a loan request.

Federal Agency Outreach Activities

Although USOCA has additional initiatives in this area, I want to briefly share with you some of the minority consumer outreach activities in other Federal Agencies. I know that all of you are familiar with the Consumer Information Center in Pueblo, Colorado which distributes more than 200 Federal Government publications. More than 100 of the publications are available in Spanish. These are listed in a special catalog, La Lista, which is disseminated throughout the Hispanic community.

FTC

At the Federal Trade Commission, the staff from headquarters and the 10 regional offices regularly sponsor conferences, conduct workshops and accept invitations from community-based organizations to speak at functions. In addition, public service announcements and publications are distributed to minority newspapers, magazines, and radio and television stations. The FTC's jurisdiction over alcohol and tabacco advertising is limited. However, because of targeting to minority communities, the FTC staff scrutinizes the advertising and promotion of alcohol and tabacco very carefully, giving particular attention to ads or promotional activities that are aimed at children.

A major goal of the FTC is to educate consumers, especially low income consumers, about fraudulent telemarketers who rob their unsuspecting victims of more than one billion dollars a year.

Last year the FTC developed a video news release and educational campaign addressing credit repair scams. This spring the FTC will target fraudulent weight loss programs in a video news release. These are among the issues that the FTC believes will have a significant impact on minority consumers.

FCC

The Federal Communications Commission continues to actively encourage minority small business entrepreneurs to consider opportunities to invest in the communications market. Through conferences, workshops and other forums, minority business leaders are being advised to look beyond traditional broadcasting station and consider such business opportunities as wireless cable and radio and information services. The FCC also provides technical assistance and counseling to minority leaders and students.

Many of you may already be familiar with the two FCC programs that assist low-income telephone subscribers, Lifeline and Link-Up America. Lifeline provides subscribers with lower monthly rates when states and local telephone companies offer matching discounts. There have been 2.6 million subscribers since 1985. Link-Up America helps make telephone service available to people who can't afford all of the costs. Low income citizens may receive a 50 percent reduction on the total service connection charge. Link-Up was developed with national support from AARP, CFA and the U.S. Telephone Association. Both programs have been adopted by most states. The programs are funded by long distance carriers through the Universal Service Fund, which reimburses local telephone companies.

CPSC

Statistics show that a third of all children who suffocate to death in plastic bags are minorities and a disproportionate number of minority children die from drowning in five-gallon buckets. The Consumer Product Safety Commission has launched a pilot project on School and Daycare Safety. The project will evaluate the Commission's effectiveness in disseminating practical information on how to prevent needless injuries suffered by children in the daycare environment and in the home.

Working with the National Council of Negro Women and other organizations, CPSC is encouraging public/private partnerships to get working smoke detectors in every home.

Several CPSC publications, including those on smoke detectors and home safety, are available in Spanish.

Getting The Message Out

With the myriad problems facing many minority consumers, government officials and educators must help them recognize that consumer information about product safety, telemarketing fraud, credit repair scams, and food and nutrition labeling is crucial.

These and other consumer issues do impact heavily on their lives. The effective delivery of this information continues to be our greatest challenge. The video news release for television generally reaches targeted audiences, including non-reading consumers or those who get most of their information from television. Radio has also been identified as the major source of information for many minority communities. But clearly, you as educators remain the ultimate resource for delivering information. It is an established fact, and especially true with minority students, " When you educate a child, you've educated a family."

We in the Federal Government are looking to you to help us educate minority families.

Cultural Diversity and Consumer Literacy: Tapping America's Resources

Eileen Hemphill, D.C. Department of Consumer and Regulatory Affairs[1]

In April of last year, President Bush and the nation's governors called for a national revolution to improve American education. By the year 2000, "every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship." This goal, one of six national education goals outlined in America 2000, also effectively summarizes the outcomes expected from consumer education efforts. It has sweeping implications for all Americans. For culturally diverse and minority populations, its realization is particularly challenging and critical to a healthy nation.

A Word About Definitions

What do we mean by "consumer education?" At one time, not unlike the consumer movement itself, the term was most often associated with a "middle class" life style of spending and consumption for enhancement purposes. In this mind-set, consumer education was an unimportant luxury. It was not related to daily life or survival skills, nor inclusive of culturally diverse or minority persons.

Today we have grown to recognize the fundamental importance of consumer education and its capacity to empower all consumers, including the more vulnerable among us. Minority and culturally diverse consumers need and want to know how to get their money's worth and generally improve their quality of life. Our responsibility as consumer educators is to equip them with the knowledge and skills needed to make good decisions in the marketplace, manage their resources effectively, and understand their rights and responsibilities.

What is in a name becomes a critical factor because labels have the ability to turn us "on" or "off." "Consumer education" is an amorphous term to most people. In fact, we have found severe misconceptions and limitations placed on the need for and value of consumer education because it is misunderstood. This deterrent to demand for instruction in consumer skills also surfaced at a day-long roundtable on the consumer literacy needs of our nation's youth convened last fall by the Consumer Federation of America, U.S. Office of Consumer Affairs, and the American Express Company. As its summary report suggests, renamed "life skills" or "consumer literacy," consumer education might be better received by communities and their boards of education.

"Diverse" is another critical term.

Contrary to popular belief, there is no monolithic Hispanic population in the United States. There are Puerto Ricans, Mexicans; there are Hondurans, Nicaraguans, Guatemalans, Columbians, and so forth.

Similar ethnic sub-groups exist within Black and Asian populations. Each group is unique and special, and efforts to reach them must respect their diversity, i.e., contrasts in interests, culture, values, and lifestyles. In culinary parlance, America is more a Mulligan stew than a melting pot.

By the year 2000, according to Census Bureau projections, more than a quarter of all Americans and a third of all children will be Hispanic, Asian, African American or Native American. It is entirely possible that by the middle of the next century, the average U.S. citizen could trace his or her heritage not to Europe, but to Africa, Asia or Latin America.

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[1] President,
National Coalition for Consumer Education
Director, Consumer Education,
D.C. Department of Consumer and Regulatory Affairs

How Have Culturally Diverse and Minority Persons Fared as "Educated Consumers"?

Not very well. Studies of adults and teens have documented that individuals from culturally diverse and minority populations scored the lowest on tests of consumer literacy (Blacks, Hispanics and the poor). The 1990 Consumer Competency Survey jointly sponsored by the Consumer Federation of America (CFA) and TRW Information Systems found disturbingly low levels of essential consumer knowledge among minority citizens. A nationwide test of the consumer knowledge of high school seniors jointly sponsored by CFA and the American Express Company in 1991 found they are virtually unprepared for the many critical purchasing decisions they will need to make after they graduate from school. Even more alarming was that the lowest scores of all were in financially-related areas (checking, banking, credit and auto insurance).

In this highly technical information age, many minorities and culturally diverse individuals still do not possess the fundamental skills needed to wade through constant "buy, buy, buy" messages and make choices that promote financial and physical fitness for themselves and ultimately for society. For mainstream consumer literate America, these results reflect basic "quality of life" components. For minority and ethnic persons lacking basic consumer knowledge, they are critical factors in a vicious cycle of poverty and abuse.

As the world moves toward a consumer driven economy, it continues to look to the United States as an example of free choice -- in the marketplace and in other areas. How our culturally diverse populations are faring within our economic system has profound implications for the future. After all, people are the most important resource and the real source of our strength as a nation.

What Are The Unique Barriers To Consumer Literacy Facing Culturally Diverse and Minority Consumers?

Barriers that must be overcome include communication, cultural, life-style, educational, legal, health, and technological. As lengthy as this list is, it is by no means exhaustive. But for each barrier there is opportunity.

Communication Barriers

Language: This area holds the most promise and opportunities for immediate gains. For example, we could:

- Survey and identify the specific language needs of targeted audiences.
- Write and design materials to specifically incorporate the literacy level, images, interests and language of targeted audiences.
- Build in translation opportunities, both in terms of staff and programs.
- Establish partnerships and linkages with community service providers known and trusted by the client target group.

Visual vs. Written Learning: Reports from researchers, teachers, and others connected with marketing verify that we live in a visual society, with decreasing reliance on the printed word. Today messages are mass communicated through carefully constructed images which are widely marketed to sell products, services, ideas and life styles. Our challenge is to market consumer literacy messages aggressively through the use of strong visual images that stand out from the other information people are bombarded with every day.

Cultural Barriers

Understanding and embracing cultural diversity and the population mix of America is a critical success component. In this regard, each individual has a role to play, beginning with an examination of one's own values. After all, we are smart, educated, worldly, successful -- and too often presumptuous. For example, did we assume that success is defined by our standards alone? Do we value family and the quality of life but show conflict in our personal and professional choices and decisions? The point is this: In order to deal successfully with cultural differences, we must be willing to scrupulously examine our own value systems and approach diverse and minority populations from a "give" and "take" perspective.

Representatives from the target group must be involved from the inception of programs. As teachers and learners, consumer education professionals must utilize the numerous resources (values, beliefs, inner strength and survival skills) of the audience being served. Programs must be developed around the principle: "If you tell me, I will forget, if you show me, I will remember, if you involve me, I will understand." Surely, we want culturally diverse and minority populations to remember critical information and understand how to use this information to their advantage.

Life-style Barriers

Life-style factors play an important role in the capacity of minority and ethnic groups to become consumer literate. Like most of us, they face competing demands for time and attention. However, individuals unable to cope with the world of consumption in making sound purchase decisions for basic goods and services have an added handicap. The problem is particularly acute in low-income households where survival is the most pressing concern. In developing practical routes to consumer literacy for culturally diverse and minority audiences, we must examine this area closely and give consideration to:

- A new definition of family
- Single parent homes
- Poor nutrition
- Financial worries (shelter, food, health care)
- Access to transportation
- Weak or non-existent family support systems

Educational Barriers

Notwithstanding the awesome task ahead of us, we can be comforted by the encouraging amount of progress that is being made in this area. This conference, with its wealth of presenters from throughout the U.S. and elsewhere, is a testament to much of that valuable work.

A further example, in addition to the test of high school students referenced earlier, is the 1990 National Survey on the Status of Consumer Education in U.S. Schools, Grades K-12, conducted by the National Coalition for Consumer Education (NCCE). Released by the NCCE on its 10th anniversary, the survey revealed that only 31 states have a consumer education policy and indicated an extensive awareness among educators of the need to teach consumer-related subjects in our schools. The most frequently mentioned subject was financial planning and management. Here again, the priorities which teachers expressed in the survey, were substantiated by the subsequent test of high school students.

To ensure consumer competency for all students, we must focus on policies, legislation and other routes to institutionalize the teaching of consumer skills. This competency must be viewed as a required part of the students' educational experience on par with math, science, and other subject matter identified in the national education goals of America 2000. Adult community and workplace education is also a priority. We should not overlook the fact that most new immigrants are adults. Many enroll in classes to learn English as a second language. Others pursue vocational instruction. This presents a prime opportunity to increase the consumer competency of these adults through continuing education programs.

As noted earlier, the roundtable on consumer literacy found the term "consumer education" a deterrent to public demand for instruction in consumer skills and suggested alternate language to increase interest in and develop advocates for teaching consumer competency. Clearly, the lack of consumer know-how is part of the much broader problem of lack of literacy and basic mathematics and reasoning skills. Society, however, is much more aware of the crisis in general literacy than the deepening problem of inadequate consumer skills.

Legal Barriers

Some of the unique problems confronted by this population will require legislative and/or legal redress. For example:

- Issues related to money "handling" - check cashing fees, minimum amounts required for bank accounts, and the need for more clearly explained credit and finance disclosures.

- Citizenship status which impacts an individual's willingness to complain or confront authorities and can result in monetary losses through unrealized legal redress for damages, and a lower standard of living. Citizenship status also negatively impacts census figures and the subsequent allocation of federal and state funds earmarked for programs that serve these special groups.

- Interest rates and usury laws (the only institutional sources of credit available to many of these consumers are high interest finance companies and neighborhood merchants).

- Territorial ratings from auto insurance companies, which charge high premiums for persons in these target groups.

Health Barriers

A prerequisite to the success of any venture is a foundation of good health. This was clearly recognized in the America 2000 education strategy, which states as its first goal "All children in America will start school ready to learn." Our quest for consumer literacy for culturally diverse and minority populations must begin at the same place.

Nutrition: Currently, consumers spend one-fourth of all income in food stores and restaurants. Advertising and marketing of food products is a multi-million dollar business. How nutritional dollars are spent becomes a critical question, particularly for our target group with low consumer literacy and multiple health problems related to nutrition. The ability to make rational consumer decisions concerning nutrition and health requires specific consumer information and skills.

Access to Health Care: Low and marginal employment levels, coupled with the high cost of health care, render a significant portion of culturally diverse and minority populations vulnerable to poor or non-existent health care. Preventive health care becomes even more remote in families struggling for basic survival.

Technological Barriers

We are witnessing the laying in of hundreds of thousands of miles of fiber optic cable which will drop the bottom out of the costs of communication. The problem will not be the cost of telephoning; the problem will be promoting and finding the uses at the end of the telephone line.

In this decade, over 90 percent of adults will have access to a computer through home, office or school situations. Currently, there are 9,000 radio stations, 2,000 magazines. Cable offers a choice of 30 to 60 channels. Time Warner is starting a test of 150 channel cable, including 55 pay stations, and the equipment can take up to 600 channels. A staggering amount of choices.

The phenomenal boom in information technology provides an opportunity as well as a challenge to insure that these groups keep pace in a manner which best serves their needs.

What Does Consumer Illiteracy Cost?

Quantifying economic losses to society from the lack of consumer knowledge may be what is needed to move consumer education from "nicety" to "necessity." What are the costs? What do we lose?

Economy Suffers

First of all, we run the risk of losing a healthy economy because there is a direct connection between our ability to make economically efficient choices in the marketplace and the state of our economy. As just one example, Blacks spend more than $250 billion a year on goods and services and Hispanics spend $170 billion. Add to this the increasing buying power of the Asian community ($38 million) and we all lose when purchasing is not driven by literate consumers.

Decreased competition among American businesses impacts our ability to produce world-class quality goods and services at a low cost. This contributes to loss of market share at home and internationally, and ultimately, to a worsening of our trade deficit. Consumers suffer, businesses are less competitive, our economy is less robust, our international competitiveness suffers, and our standard of living continues to fall.

Health Care Costs Escalate

Inadequate skills and knowledge about consumer nutritional choices are linked to many health-related problems and result in substantial losses when we factor in lost production time and long term care. According to Healthy People 2000, the U.S. Department of Health and Human Services' strategic plan for improving the nation's health, consumer food consumption choices are associated with 5 out of 10 leading causes of death in the U.S. The Surgeon General's Report on Nutrition and Health found that for 2 out of 3 Americans who neither smoke nor drink, food choices may shape their long-term health prospects more than any other personal choice.

Consumer Frauds Increase

As the consumer world expands, so must our defenses. For example, Americans lose an estimated one billion dollars yearly to fraudulent telemarketers, and anyone with a telephone is fair game for these fly-by-night con men.

Employees Require Retraining

Literacy and basic skills are required of good workers, as well as good citizens and good consumers. Enormous sums are spent on remedial training of workers by businesses, non-profit organizations and government agencies.

Consumer Debt Rises

Until recently, consumer debt had been growing steadily each year for the past 30 years. In 1990, personal bankruptcies hit an all time high of over 900,000. Now American consumers are paying off old debt at a rate faster than their accumulation of new debt. Bad debt impacts more than the individual. In 1988, it cost each U.S. resident $250 in higher prices.

Waste

Billions of dollars are being wasted by uneducated consumers on the useless products and services of inefficient companies. To be competitive in the global market, U.S. businesses must be competitive at home. Skilled consumers promote true competition in the marketplace.

Brain Drain

Last, but not least, when individuals are not consumer literate, we lose critical thinkers. Individuals who approach the marketplace equipped to mentally challenge and sort options are a national treasure whose value cannot be overrated.

Where Do We Go From Here?

As bleak as the list of "losses" is, there is an equally challenging list of opportunities to turn this situation around. For example:

- The emerging geriatric Americans are the most prosperous, highest income, best educated and most interventionist group the world has witnessed to date. In the 1988 election, while 12.4 percent of the population was over 65, 19.4 percent of the voters were over 65. Business is on notice about this powerhouse, but think of the potential for consumer education. Enormous information, education and wealth is in these hands. We need to identify ways to link these resources with needs of culturally diverse and minority populations.

- Teenagers, particularly in single parent homes, are assuming more and more of the responsibility for family income -- groceries, transportation, entertainment and telephone. In 1990, teenagers spent an estimated $79 billion on products and services in the marketplace. How this money is spent or misspent becomes an issue of enormous importance, and consumer education is the key.

- The Advertising Council creates over $1.2 billion of free advertising a year for worthy causes. Consumer education needs a chance to compete with the sophisticated education coming from advertisers, using their tools of the trade. Advertisers can accomplish things that the best-intended pamphlets and press releases cannot, because they are expert at making information interesting. They make it dramatic, give it a human value, bring it to life where people really do live, not where we expect them to live, or want them to live. Advertisers help it stand our from all the other information they are bombarded with every day. Perhaps consumer education needs a massive media campaign to raise the consciousness level of U.S. citizens.

- As consumer education professionals, we must listen to consumers -- really listen to them. Encounter them directly in groups, person-to-person, off the beaten track. Find out what is really in their minds and in their hearts. With a better understanding of their culture, values, and life-style, we can begin to aggressively target these underserved consumer segments.

- Consumer education organizations must reflect cultural diversity in their staffing patterns. This sensitivity should also extend to finding creative and consistently reliable ways to obtain input from the diverse populations we seek to serve.

- Corporations have long recognized the advantages of dealing with well-informed customers. Now they are increasingly aware of the profitability of marketing to minority and culturally diverse audiences who have substantial buying power. More recently, business itself has taken steps to educate consumers. The establishment of a one million dollar Credit Education Fund underwritten by AT&T and managed by the National Coalition For Consumer Education is a notable example. In 1990, its first year of operation, grants helped fund projects targeted for minority and special needs populations including migrant farm workers, low-income minorities, and mentally handicapped adults. Second-year grant recipients will be announced during National Credit Education Week in April 1992. As research has shown, there are benefits that come from dealing with an educated consumer and benefits that occur when a corporation uses its resources to initiate an aggressive consumer education program.

- To address the needs of minority consumers and culturally diverse consumers, we must become familiar with their local and neighborhood leaders. These community service providers with formal and informal ties to the community are known and trusted by their constituencies. Through these linkages, we gain greater credibility and access to the populations we want to reach.

- Because education policy is developed at the state and local levels, we must develop advocates there and ensure that all voices are heard on the critical importance of consumer education. Properly challenged and motivated, state and local minority leaders can become powerful consumer advocates and partners in consumer education.

Conclusion

We have the advantage of knowing now that the United States stands at the brink of an ethnic revolution. Realizing that diversity will be our reality, we have the opportunity to make it our strength. We will need to go in many directions -- all leading to the goal of creating an inclusive society where cultural and economic differences pale as we provide realistic and tangible vehicles which enable culturally diverse and minority groups to function effectively in an increasingly complex marketplace.

There is an urgency for each of us to commit to a national goal of consumer literacy for all by the year 2000. This goal will not be fulfilled by telling minority and ethnic persons what is good for them, or protecting them against what is bad, and then going to sleep. It requires a system that is wide awake, wide open -- a system that allows what we think we know to be challenged, to be questioned, and encourages the discovery and distribution of new and better answers.

In a poet's words, we have promises to keep. And miles to go before we sleep.

Mental Accounting and Saving Behavior

Jing-jian Xiao, University of Rhode Island[1]
Geraldine I. Olson, Oregon State University[2]

This study tested the validity of the mental account assumptions by utilizing a stock adjustment model. Data from 1983 and 1986 Surveys of Consumer Finances were used and the tobit results supported the hypotheses developed on the basis of mental account assumptions.

The life-cycle hypothesis has been dominant in the modeling of savings behavior and inspired numerous empirical studies. However, the results of these studies have not been satisfactory, especially when using microdata (Courant et al, 1986). As an improvement of the traditional life-cycle hypothesis, Shefrin and Thaler (1988) proposed a behavioral life-cycle hypothesis, incorporating several socio-psychological features into the traditional model. Using their model, they proposed several directly testable hypotheses, and cited dozens of empirical but indirect studies to suggest that abnormal saving behaviors, as viewed by the traditional model, could be reasonably explained by this behavioral version (Shefrin and Thaler, 1988; Thaler, 1990).

Mental accounting is one of the socio-psychological features incorporated into the traditional life-cycle hypothesis by Shefrin and Thaler. The purpose of this paper is to examine the validity of the mental accounting concept. Here the components of household asset portfolios refer to differentiated mental accounts which are designed to represent relatively discrete objectives for saving. Specifically, this study attempts to conceptually define and operationalize mental accounts, and to investigate the validity of the mental accounting concept by identifying own-adjustment and cross-adjustment characteristics of these mental accounts.

Mental Accounts

The mental account is a critical concept in the behavioral life-cycle hypothesis. Because of the existence of mental accounts, the assumption of fungibility of family saving, suggested by the traditional life-cycle hypothesis, is relaxed.

Originally, mental accounting was proposed as a decision-making pattern by psychologists when they were researching decision behavior (Kahneman and Tversky, 1984). Shefrin and Thaler (1988) also proposed three mental accounts when presenting their behavioral life-cycle hypothesis: a current income account, an asset account, and a future income account.

Mental accounts as used in this study are basically adapted from Shefrin and Thaler's framework, but they are constructed in a somewhat different way. Mental accounts are hypothesized as a reflection of consumers' financial needs, with the unique characteristics of various financial needs manifested as a series of mental accounts. A conceptualization of financial needs may be derived from information obtained through consumer surveys. In this study, questions included in the Surveys of Consumer Finances (SCF) were utilized.

The respondents of the SCF were asked "what are the most important reasons for savings?" Common answers were the following: retirement,

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[1] Assistant Professor, Human Development, Counseling, and Family Studies

[2] Associate Professor, Human Development and Family Science

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emergencies, children's education, ordinary living expenses, purchase or travel plans, better life, and so on. One usual way to categorize these needs is to consider the time dimension. Savings put in checking accounts may always be used to meet consumer's daily living expenses, but many other financial needs vary with time. Saving for retirement may be a long-term plan for young consumers but a shorter-term plan for middle-aged consumers. Saving for children's education probably depends on the children's ages and number. Saving for emergencies is hard to classify either in a present, short-term, or long-term category. If we knew exactly when the event would happen, it would not be called an emergency. Thus, it is difficult to categorize financial needs into a uniform conceptual framework based on time frame alone.

Maslow (1955) has proposed a hierarchy of needs. He identifies five ascending needs: physical, safety, belongingness and love, esteem, and self-actualization. Comparing Maslow's needs hierarchy with consumers' reported financial needs from the SCF, a good match is found. Thus it seems reasonable to consider consumer's financial needs as a special form of Maslow's needs hierarchy.

Maslow (1955) also proposes the dynamic nature of human needs. He writes that "the most basic consequence of satiation of any need is that this need is submerged and a new and higher need emerges". Katona (1960, p.131) agrees with Maslow's notion but adds that "need is not necessarily a higher need". This suggests the two-way movement of needs, from lower- to higher levels, or in a reverse direction.

In summary, these financial needs could be characterized as: 1) hierarchical; 2) dynamic; 3) increasing or decreasing in numbers (or levels); 4) moving up to a higher-level need after the lower-level need has been met, or down to a lower-level need if that lower-level need has failed to be sustained. Different mental accounts may roughly correspond to these hierarchical needs, which implies that, along with an increase of income, consumers will move to higher levels of needs, and tend to have a wider variety of financial assets.

Based on Maslow's theory, as adjusted to family financial needs, and considering simplicity of variable specification for empirical study, all these needs are categorized into three mental accounts. These mental accounts are called ACCT1, ACCT2, and ACCT3, corresponding roughly to: 1) survival needs, 2) security needs, and 3) social/developmental needs.

ACCT1 is characterized as meeting daily and emergency financial needs, ACCT2 as meeting future financial needs, and ACCT3 as meeting social and personal developmental needs. Saving for emergencies is put in ACCT1 because the consumer is hypothesized as risk averse, preparing for an emergency that might happen at any time. Saving for a better life is put in ACCT3 because the consumer is assumed to put money into this account after he/she has put enough money into the first two accounts.

The rest of this section discusses marginal propensities to consume from mental accounts. Shefrin and Thaler (1988) identified three mental accounts; a current income account (I), an assets account (A), and a future income account (F). Their hypothesis states that the aggregate consumption function must incorporate at least three different income or wealth measures corresponding to the three mental accounts. That is, $C=f(I,A,F)$, where I, A, and F stand for their aggregate counterparts. The model suggests that,

$$1 \approx \partial C/\partial I > \partial C/\partial A > \partial C/\partial F \approx 0. \quad (1)$$

This MPC hypothesis makes two points. The first suggests the existence of a MPC hierarchy. Consumers are assumed to consume more from current income accounts than from the assets account, and to consume the least from the future income account. This assumption will be held in this study. The second point made by inequality (1) is that, over a given time period, consumers consume almost all of the current income account, but hardly consume from the future income account. This notion may be reasonable, because their future income account covers savings in pensions and payments to social security. However, it is less realistic in this study since the range of assets covered is narrower than that defined by Shefrin and Thaler, and corresponds most closely to their current income and assets account. Thus the assumption about marginal propensities to consume from three mental accounts in this study is weaker than theirs. Assume that the aggregate consumption function is, C=f(ACCTi), where ACCTi (i=1,2,3) are mental accounts. And assume that a MPC hierarchy exists in such a manner,

$$\partial C/\partial(ACCT1) > \partial C/\partial(ACCT2) > \partial C/\partial(ACCT3). \quad (2)$$

Inequality (2) suggests that the marginal propensities to consume (MPC) from ACCT1, ACCT2, and ACCT3 are different. More specifically, the MPC from ACCT1 is the largest, the MPC from ACCT3 is the smallest, and the MPC from ACCT2 is somewhere in between.

Saving is the complement to consumption, keeping income and wealth constant. Different marginal propensities to consume from various mental accounts imply that saving situations in these mental accounts would be different, and the saving increments for ACCT1, ACCT2, and ACCT3 would be the smallest, in between, and the largest, respectively.

Hypotheses

All assumptions about the consumer in a utility model are held. The consumer is informed, rational, and utility maximizing. At a given income level, consumers purchase various financial products. The purpose of purchasing these financial products is to pursue desirable characteristics embedded in these products. The characteristics of these financial products match the properties of their discrete mental accounts. Consumer save in their various mental accounts to meet different financial needs. Based on the above notion, a stock adjustment model could be developed. Q^d_{kt} is denoted as the desired stock of item k in year t by an individual family. In most aggregate time series models, Q^d_{kt} is specified to be a function of the rates of return for all stocks in the portfolios and permanent household income. But in disaggregated models, such as the one estimated here, it is virtually impossible to calculate rates of return for each household's portfolio of stocks (Zick and Gerner, 1987). To solve this problem, Bryant (1986) assumes that prices, interest rates, and other economic conditions (e.g., credit restraints) vary with a household's demographic characteristics. In addition, based on the behavioral life-cycle hypothesis, family characteristics will influence decision makers' self-control process. Consequently, related family characteristics will have effects on the desired stock of household assets (here referring to mental accounts).

Assuming that the linear relationship between the desired demand for mental account k in period t and its influencing factors exists, it follows that,

$$Q^d_{kt} = \beta_{kt} D_{kt} + e_{kt} \qquad (3)$$

where, Q^d_{kt} = the desired demand for mental account k in year t,

β_{kt} = "long-run" or "equilibrium" effects of the family characteristics (exogenous variables) on demands,

D_{kt} = exogenous variables (family characteristics, including family income) determining desired demand[1],

e_{kt} = a vector of random error terms.

Equilibrium effects refer to the effects of certain family characteristics as exogenous variables on the desired demands of mental accounts. It should be noted that the assumption expressed implicitly is that these family characteristics remain the same during the period.

Assuming that disequilibrium exists in terms of the desired stock and real stock of mental account k, that the family always adjusts real stocks of portfolio components toward the desired state, and that the stocks of portfolio components interact with each other, the difference of the real stock of mental account k between two points of time will reflect the changing state of the disequilibrium. Specifically, the following equation postulates,

$$(Q_{kt} - Q_{k(t-1)}) = \alpha_{kk}(Q^d_{kt} - Q_{k(t-1)}) + \Sigma\alpha_{kj}(Q^d_{jt} - Q_{j(t-1)}) + v_{it}. \qquad (4)$$

where Q_{kt}, $Q_{k(t-1)}$ = real stocks of mental account k in period t and t-1[2],

α_{kk} = the parameter reflecting own adjustment of mental account k,

α_{kj}=the parameter reflecting cross adjustment between mental account k and j,

Q^d_{kt}, Q^d_{jt}=the desired stocks of mental account k and j in year t,

$Q_{j(t-1)}$=the real stock of mental account j in period t-1,

v_{it}=a vector of random error terms.

Equation (4) implies that the difference in real stocks of mental account k between period t-1 and t reflects both the difference of the desired demand of mental account k in period t and the real stock of mental account k in period t-1, and the differences of the desired demand of mental account j in period t and the real stock of mental account j in period t-1. To put it in another way, the savings in one mental account over a period are affected by both the adjustment of this mental account and the adjustment of other mental accounts. The α_{kk} is called the own-adjustment coefficient, which reflects the degree of own-adjustment of one mental account. If, for instance, α_{kk}=.6, then 60% of the gap between the desired demand in period t and the real stock in period t-1 in terms of mental account k closed because of the change of real stocks of mental account k during period t-1 and t. α_{kj} is called the cross-adjustment coefficient, and it reflects the interaction between mental accounts. More specifically, it measures the extent to which the adjustment of one mental account effects the adjustment of another mental account. If α_{kj} is positive (negative), it indicates that the adjustment of mental account j has a positive (negative) effect on the adjustment of mental account k. If the effect is positive, it displays the idea that both adjustment processes are complementary, while if the effect is negative, it suggests that the two processes are competitive[3].

Why do disequilibria between the desired stocks and the real stocks of mental accounts exist? Bryant (1987) suggests that the reason is because of transactions costs and household inertia. The stock adjustment model does not answer why families always proceed with an adjustment process, but previous studies imply that this process is on-going. Also, the stock adjustment model does not give any hint about the direction of own- and cross-adjustment. Thus without considering other theoretical frameworks, the understanding of stock adjustment of household assets is incomplete.

The mental account assumptions can fill the gap left by the stock adjustment model. Incorporating the hypothesis into the stock adjustment model, several things become clear. Desired stocks of mental accounts could be viewed as financial goals of families. The reason that families adjust their stock of household assets is that they attempt to meet their financial needs. In addition, based on the mental account assumptions, several specific predictions about own- and cross-adjustment coefficients can be made.

(1) An own-adjustment coefficient could be viewed as the speed of adjustment of the desired stock and the real stock of one mental account, and it could be positively related to the marginal increment of savings in that mental account. Recalling the discussion about the different marginal increments of savings in various mental accounts, the relationship between own-adjustment coefficients of three accounts could be:

$$\alpha_{ACCT1} < \alpha_{ACCT2} < \alpha_{ACCT3}. \qquad (5)$$

This is the first hypothesis.

(2) Cross-adjustment coefficients reflect the interactions between mental accounts. The interaction could be understood as the psychological influence on saving behavior. If the self-control assumption (Thaler and Shefrin, 1981) holds, the extent to which families save depends on the psychological cost needed in exercising willpower. If the degrees of exercising willpower are different when saving in different accounts, the psychological influence of saving in one mental account would be different from that in another account. Considering the existence of a mental account hierarchy, the influence of saving in one account on another account will be different from the impact given by the other account, which depends on the relative positions of these two accounts in the mental account hierarchy. For example, a family saving in ACCT1 will exercise larger willpower than when saving in ACCT2. If this family could save a certain amount money in ACCT1, it would save more in ACCT2, over a period of time. This is the situation when the adjustment process is complementary. If the adjustment is competitive, it implies changing needs of the family over one period of time. Since

ACCTi is more basic than ACCTj (i>j, i,j=1,2,3), ACCTi is more competitive when it affects ACCTj than ACCTj's effect on ACCTi. Assuming that the cross-adjustment coefficient is positively related to these interactions, the relationship between cross-adjustment coefficients should be expected as:

$$|\alpha_{ACCTi\to j}| > |\alpha_{ACCTj\to i}|,\ i,j=1,2,3;\ i<j. \quad (6)$$

This is the second hypothesis.

Methodology

Because the household's desired holdings of any stock at a point of time are not observed, estimation of the adjustment process can be done only after substituting the determinants of the demand for desired stocks directly into the stock adjustment equation. Substituting equations (3) into equations (4) yields,

$$(Q_{kt}-Q_{k(t-1)})=\alpha_{kk}(\beta_{kt}D_{kt}-Q_{k(t-1)}) \\ +\Sigma\alpha_{kj}(\beta_{jt}D_{jt}-Q_{j(t-1)})+v_{it}. \quad (7)$$

Reorganized (7), it becomes,

$$(Q_{kt}-Q_{k(t-1)})=\tau_{kt}D_{kt}-\alpha_{kk}Q_{k(t-1)} \\ -\Sigma\alpha_{kj}Q_{j(t1)}+v_{it}. \quad (8)$$

A censored sample is one where the value of the dependent variable, corresponding to some observable values of independent variables, is unobservable (Judge et al, 1980, p.615). The sample used in equation (14) is a censored sample, since dependent variables in it are dollar values of various financial assets, and some families in the sample do not possess certain kinds of assets.

In stock adjustment model literature, estimations of parameters are conducted by using Ordinary Least Square (OLS) procedure, but this is not appropriate in the context of this study since application of OLS procedure to a censored sample produces biased and inconsistent estimators (Judge et al, 1980, p.615). An appropriate way to estimate parameters of a linear equation with a censored sample is using a tobit model (Maddala, 1983).

The tobit model was originally proposed by Tobin (1958) as a hybrid of probit analysis and multiple regression to deal with censored samples. In order to use the tobit model, equation (8) can be rewritten as:

$$Q_{kt}=\tau_{kt}D_{kt}+(1-\alpha_{kk})Q_{k(t-1)}-\Sigma\alpha_{kj}Q_{j(t-1)} \\ +v_{it}. \quad (9)$$

In the form of the tobit model, equation (10) can be expressed as:

$$Q_{kt}=\tau_{kt}D_{kt}+\alpha_{kk}'Q_{k(t-1)}+\Sigma\alpha_{kj}'Q_{j(t-1)}+v_{it}. \quad \text{if } Q_{kt}>0 \\ Q_{kt}=0 \quad \text{otherwise} \quad (11)$$

where, $\alpha_{kk}'=1-\alpha_{kk}$, and $\alpha_{kj}'=-\alpha_{kj}$. Parameters τ_{kt}, α_{kk}', and α_{kj}' in equation (11) can be estimated by using the maximum likelihood procedure (Maddala, 1983, pp.151-156). Parameters of each tobit equation will be estimated separately.

The data are from the Survey of Consumer Finances (Avery et al, 1987). This data set includes two surveys conducted in 1983 and 1986 by the Survey Research Center of the University of Michigan, and consists of 3,665 and 2,822 area probability samples, respectively. In this study, only families of single adults with or without children, or couples with or without children are included in the sample analyzed. In addition, only single persons without marital changes, or married couples who retain marital status between 1983 and 1986 are chosen. A final sample of 2,419 is used in this study. The cleaned and imputed data file was used, and the sample was unweighted.

Statistical analyses include the following steps. The sample is first stratified into three income levels. Then intangible household assets are grouped into three mental accounts, and dependent and independent variables are specified. Finally, a LIFEREG procedure of SAS was used to estimate parameters of equation (11).

To investigate different saving patterns among families at various income levels, observations in the sample are stratified according to their 1985 annual family incomes. The three income categories selected are: 1) $19,999 or less, 2) $20,000-$49,999, and 3) $50,000 or more.

Mental account variable ACCT1 includes dollar values of checking, statement savings, passbook, share draft, other savings accounts, money market accounts, and certificates of deposit. ACCT2 includes values of individual Retirement and Keogh Accounts, employer-sponsored profit sharing, thrift and other savings plans, trusts, managed investment accounts, notes and land contracts owed to the household. ACCT3 includes values of savings bonds, municipal, corporate, and all other bonds, publicly traded stock, including stock in mutual funds, but excluding money market or IRAs. Mental account variables with 1986's values are dependent variables, and those with 1983's values are independent variables used in the stock adjustment model.

Results

Relative to the other income groups, low-income family units in this sample are likely to be female-headed, older, unemployed, retired, single, have less than a high school education, and have much lower assets and debts. High-income families appear to be male-headed, middle-aged, working, married with/without children, college educated, and have much higher assets and debts. Middle-income people are likely to have the same characteristics (sex, age, working status, life cycle stage, household size, and education) as high-income people, but have much lower assets and debts, on average, than the rich.

Estimates of own-adjustment coefficients and cross-adjustments of mental accounts for low-, middle-, and high-income subsamples and for the total sample can be found in Table 1.

Own-adjustment coefficients

Generally speaking, the first hypothesis is strongly supported by the findings. The first hypothesis suggests that a previous period mental account would influence its present period counterpart in such a manner that the gap between the desired demand and the real stock of the mental account is filled by a certain percentage, which is indicated by the corresponding own-adjustment coefficient. The results from the total sample and three subsamples are consistent with the hypothesis. During a three-year period, families in the total sample have filled the gaps between desired stocks and real stocks for ACCT1, ACCT2, ACCT3 by 14, 55, and 69 percent, respectively. The situation of the low-income group is similar, in that gaps in ACCT1, ACCT2, and ACCT3 are filled by 11, 87, and 96 percent. The corresponding figures for middle-income families are 45, 81, and 88 percent. The high-income group shows the same pattern. The own adjustment coefficients in ACCT1, ACCT2 and ACCT3 are 8, 20, and 40 percent, respectively.

Table 1
Own- and Cross-adjustment coefficients

	ACCT1	ACCT2	ACCT3
Total Sample (n=2419)			
ACCT1$_{83}$	.14*	.98*	.79*
ACCT2$_{83}$	-.08*	.55*	.02
ACCT3$_{83}$	.03*	-.10*	.69*
Low-income Sample (n=786)			
ACCT1$_{83}$	.11*	-.002	-.04*
ACCT2$_{83}$	-.15+	.87*	.002
ACCT3$_{83}$	.001	-.08*	.96*
Middle-income Sample (n=966)			
ACCT1$_{83}$	.45*	-.05+	-.18*
ACCT2$_{83}$	.01	.81*	-.21*
ACCT3$_{83}$	-.10*	-.07*	.88*
High-income Sample (n=667)			
ACCT1$_{83}$	.09*	1.50*	1.69*
ACCT2$_{83}$	-.09*	.20*	.03
ACCT3$_{83}$	.03*	-.12*	.40*

* $p < .05$ + $p < .1$

Cross-adjustment coefficients

The second hypothesis implies that the absolute values of cross-adjustment of ACCTi to ACCTj are larger than those of ACCTj to ACCTi ($i,j=1,2,3$; $i<j$). This assumption is completely supported by the results from the middle-income sample. In this subsample, ACCT1 and ACCT3, ACCT2 and ACCT3 are seen to be competitive, since the corresponding coefficients are negative. The effect of ACCT1 on ACCT3 is eighteen percent, while the effect of ACCT3 on ACCT1 is only ten percent. Similarly, ACCT2's influence on ACCT3

percent. Similarly, ACCT2's influence on ACCT3 is 20 percent, while ACCT3's effect on ACCT2 is only seven percent. Interactions between ACCT1 and ACCT2 are not statistically significant.

In the low-income group, only the result from one of three pairs of mental accounts are consistent with the second hypothesis. ACCT1 and ACCT3 act in a manner consistent with the hypothesis. However, the pairs of ACCT1 and ACCT2, and ACCT2 and ACCT3 show a pattern opposite to the one predicted by the hypothesis. It implies that the poor treat these mental accounts in different ways than do the middle class.

Situations in the high-income group are different from either the middle class or the poor. First of all, ACCT1 and ACCT3 are complementary. ACCT1 has a much larger positive impact on ACCT3 than that of ACCT3 on ACCT1, which is consistent with the second hypothesis. Secondly, ACCT1 has a positive effect on ACCT2, while ACCT2's effect on ACCT1 is negative. Finally, ACCT3 affects ACCT2 negatively, while ACCT2 hardly influences ACCT3. The latter two situations are not consistent with the hypothesis. At minimum it suggests a different saving pattern of the rich compared to the low and middle income classes. It may also suggest that ACCT2 and ACCT3 are not as mutually exclusive for the rich as for the middle class, and that more information is needed about the actual financial needs being met by various financial instruments, especially for the high-income group. Situations in the total sample show the same patterns as that of the high income group which is probably caused by the fact that the rich hold the largest portion of assets in terms of both ownerships and dollar values.

In summary, the estimates of cross-adjustment coefficients in the middle-income group are very supportive of the second hypothesis, while those of the low and high income offer only partial support to the hypothesis. This situation strongly suggests that compositions of mental accounts of families at different income levels are not necessarily the same as was assumed in this study.

Conclusions

First of all, the first hypothesis based on mental account assumptions is confirmed by own-adjustment coefficient estimates of the total sample and all subsamples. This indicates that consumers may divide their paper assets into some hierarchical accounts. They tend to save the most in the account at the least basic level, and save the least in the account at the most basic level over a period of time.

Secondly, the second hypothesis based on mental account assumptions is partly confirmed by cross-adjustment coefficient estimates. Especially, the behavior of middle-income families is consistent with the hypothesis. However, behaviors of the low and high income families only partly support the hypothesis. The supported assumption implies that assuming the interactions between mental accounts are complementary, if a consumer can save a certain amount in an account at a more basic level, one will save more in any account at a less basic level, because saving in a more basic level account requires one to exert a larger amount of willpower. On the other hand, if the interactions between mental accounts are competitive, an account at a more basic level will be more competitive than an account at a less basic level. The different behavior patterns shown in the low-income group and the high-income group imply that their mental account hierarchies, the assumption regarding required willpower, or the specific definitions of these mental accounts may differ from those of the middle income group. If mental account assumptions are valid, many implications could be developed and they would be meaningful for family finance educators, financial service and counseling marketers, and public policy makers.

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Endnotes

1. Time as an influential factor is not included explicitly here. However, a time constraint is implicitly addressed in some family characteristics. For example, a couple with children will have less time spent for portfolio purchasing than another couple without a child, *ceteris paribus*.

2. In this study, three years are treated as one period, i.e. t=1986 and t-1=1983, because only these two years' data are available in the data set used. Considering three years as one period will simplify the model specification. This treatment can be found in a previous study (Zick and Gerner, 1987). Actually, considering three years as three periods will be more accurate and more realistic. To do this, the model specification will be much more complicated but is possible. However, an estimation difficulty will be caused since usable longitudinal data in three consecutive years are not available.

3. Cross-adjustment coefficients might be negative, which suggests possible transfers between mental accounts, but savings in these accounts are usually increasing in absolute terms, perhaps at different rates. Transfers between mental accounts imply financial needs of families are changing.

The Life of the Wife:
The Demand for Life Insurance

Robert O. Weagley, University of Missouri, Columbia
John G. Taylor, University of Missouri, Columbia[1]

The demands for the total face value of individually purchased life insurance on the life of the wife and its components of permanent and term insurance were each positively related to education, homeownership, total person-years of financial dependency, and employment status. Greater income increased the demand for permanent insurance and greater net worth, non-significant to total life insurance demand, decreased the demand for permanent and increased the demand for term life insurance. Finally, age was positively related to permanent and negatively related to term life insurance demands.

Given the increasing incidence of two income earner couples in the United States and the growing dependence of families on a second income, the role of wife's earnings has become increasingly important in determining the family's need for life insurance. While research has examined the effect of the wife's employment on the total household demand for life insurance and, in particular, its effect on the demand for life insurance on the life of the husband, research has not attempted to understand the factors which affect the demand for life insurance on the life of the female spouse. It is the purpose of this paper to examine that topic.

Historically, attention focused on the life of the husband as he was the sole breadwinner and, hence, his income was perceived to be all that needed to be insured. There was little attention paid to the wife's economic contribution as a homemaker and the additional costs he would face should his spouse die and leave him with the extra burdens of child care and housekeeping. The increasing dependence of families on the second income of the wife is changing this financial decision. In many households, the wife earns as much as, or more than, the husband and in many others their level of living is dependent on her earnings as well as his.

Literature

Early research focused on the premium amounts paid by individual and families as the dependent variable (Hammond, et. al., 1967; Duker, 1969). While the levels of premium may be of interest to the life insurance industry, the premium merely represents the cost paid for an unknown quantity of insurance. Without information on both the amount of life insurance in force and the type of life insurance, whether a term or a whole life product, the premium expenditure is an unreliable measure of life insurance demand. Rather it is simply a measure of life insurance premium expenditure. Nonetheless, Hammond (1967) explored life insurance premium expenditures and found that they were positively related to income, net worth, life cycle, occupation, and education.

Duker (1969) was the first to examine the life insurance expenditures of working-wife families. Utilizing the 1959 Survey of Consumer Finances, he concluded that "the working wife may constitute more than an additional source of income. She is also an alternative (to the husband) source of income, and, as such, she approximates an insurance policy."

Not until 1972 (Berkeson, 1972) was the face amount of life insurance examined as a dependent variable, and then the research was limited due to its reliance on samples of young married couples utilizing surveys of college classes. The total amount of life insurance purchased was found to be positively related to number of children, income, and birth order of husband, and negatively related to age.

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[1] Associate Professor and graduate student, Department of Consumer and Family Economics

Anderson and Nevin (1975) examined the amount and type of life insurance held by a sample of young married couples. Using Multiple Classification Analysis, they concluded that the household income, expected household income, net worth, husband's insurance before marriage, and wife's insurance before marriage were positively related to life insurance demand. In contrast to other studies, education was found to be negatively related to insurance demand.

Ferber and Lee (1980) employed a sample collected in 1968 of 149 couples from Decatur and Peoria, Illinois to examine the acquisition and accumulation of life insurance in the first eight years of marriage. They reported that a couple is more likely to purchase life insurance if family income is greater, they are homeowners, the husband is highly educated and acts as family financial officer. In the first two years of marriage, the purchase of life insurance is positively affected "by the presence of a comprehensive budget, by a lower family income, by the husband employed in a managerial or clerical profession, by the husband being satisfied with life, and by a less educated wife". By the final span of marriage analyzed - six to eight years after marriage - the couples were found to purchase larger amounts of life insurance if they had fewer children, larger net assets, a large stock of life policies, a favorable attitude toward saving, if the wife is working and if the husband is dissatisfied with life.

In 1983, Art Goldsmith set out to show that households with a more educated wife substitute her human capital skills for term life insurance on the husband. Tobit analysis demonstrated that the lack of human capital development in the wife resulted in the purchase of more life insurance on the life of the husband. Moreover, if the wife was employed in the labor force, the face amount of life insurance held declined. Moreover, life insurance demand was found to be negatively associated with networth.

In summary, past research has found conflicting results and has sometimes employed unreliable dependent variables. For example, networth, education, and the presence of children have been found to both increase and decrease life insurance demand depending on the study and dependent variable. The studies reviewed have either used premium expenditures as a dependent variable which, given the diversity of insurance products, is an inappropriate measure of insurance demand, or have summed the face values held of both term and whole life products as the measure of life insurance demand. Such a summation would be incorrect, given the pure insurance nature of term life insurance and the mix of savings and insurance contained in whole life insurance. It is not clear that the factors which create a demand for life insurance protection are the same as those factors which create a demand for the tax deferred savings feature of whole life insurance products.

Conceptual Framework

To understand life insurance demand one need only think about a needs-based life insurance planning worksheet found in most introductory personal finance texts (for example, Gitman and Joehnk, 1990). The factors which affect demand change over the life cycle. During childhood and single adulthood there is typically little need for life insurance as there is no one that is dependent on the young life for income and financial support. However, following marriage and, particularly, following the birth of children there is an increase in the demand for life insurance as the number of financial dependents and total person-years of financial dependency increase. In addition, early in the family life cycle, household indebtedness is typically high and life insurance to repay existing installment loans, mortgages, and personal loans is necessary. As the children age, there is a reduced need for life insurance but, in the face of inflation, life insurance demand may remain high. Once the children become independent a household will experience a reduced demand for life insurance as there are fewer people dependent on the household income and the investment portfolio will be more adequate as a replacement for income lost through death.

The scenario sketched out above is a standard approach to the demand for the insurance protection offered through life insurance. It does not, however, represent other factors which might affect the demand for other features of a life insurance contract. Whole, or permanent, life insurance products typically offer the consumer a fixed premium payment for life which purchases them a face value of the contract, which includes a savings, or cash value, portion. The money held in the cash value portion of the policy earns interest without incurring a current tax liability. Later in life, the cash value can be annuitized to help pay for retirement income needs or, should the insured die first, the cash value is merely paid as a part of the face value and no income taxes are due. Given this, the relationship between age and the demand for permanent insurance may be different from the general demand for life insurance discussed above. In fact, the increasing premiums of term life insurance as one ages and the retirement savings aspect of permanent life insurance, would imply that a larger amount of permanent life insurance would be demanded, *ceteris paribus*, by older consumers while age would be negatively related to the demand for term life insurance.

Other life cycle factors can be expected to be related to the demand for life insurance on the life of the wife. The number of years for which the household is responsible for dependents should be positively related to the demand for life insurance. This would be expected to be particularly true for the demand for pure life insurance protection (term) as opposed to permanent life insurance products, in which savings is a characteristic of the product.

The complexity of the life insurance market makes the decision of the type of insurance to purchase difficult. Often, households do not purchase an insurance contract; rather, they are sold an insurance contract. Insurance salespersons tend to promote permanent life insurance products (with their greater commissions). As such, the choice to purchase either term insurance instead of whole-life insurance is dependent on the customer's knowledge of insurance products. One would expect that better educated consumers to be more knowledgeable about market alternatives and less likely to purchase permanent life insurance products on the life of the wife.

The employment status of the wife could be expected to influence the demand for life insurance. Theoretically, the greater the employment of the wife, the more likely the family will be dependent on her income to maintain their level of living.[1]

Given the likelihood of a homeowner having a mortgage on their home, it is expected that homeowning households would have greater life insurance demand. This would be particularly true for term insurance products as mortgage life insurance is a form of term insurance.

The economic factors of income and networth have been stated to be particularly important to the demand for life insurance. This should be no less true for the demand for life insurance specifically on the life of the wife. It would be expected that income would be positively related to the demand for life insurance protection since the greater the income, *ceteris paribus*, the greater the need for insurance to protect that income. This relationship should hold true without regard to the type of insurance analyzed.

The relationship for networth is not as clear as the relationship for income. One might expect that greater levels of networth would decrease the demand for life insurance on the life of the wife as the wealth could be annuitized as a substitute for her lost income. However, this assumes that there is no motive to bequeath wealth to later generations as well as assuming that all insurance policies are alike. The tax-deferred earnings aspect of permanent life insurance policies might be expected to be demanded by those of higher income or wealth in order to accumulate greater wealth with taxation being deferred. In addition, greater wealth creates the potential for estate tax liability. Permanent, whole-life insurance products would provide estate liquidity at death. Therefore, the effect of networth on the demand for life insurance on the life of the wife remains an empirical question.

Income and networth may also display a non-linear relationship to insurance demand. Von Neumann and Morgenstern (1947) proposed that the relationship between income (wealth) and utility was a non-linear convex utility function. They proposed such a utility function for the average consumer who wants certainty rather than uncertainty. This desire for certainty, allows an insurance market to exist. A further implication of von Neumann and Morgenstern is that those with lesser non-human wealth would demand more insurance, *ceteris paribus*, than those with greater non-human wealth, because the latter would be more likely to self-insure. Their hypothesis argues for both a linear and squared term for both income and wealth in the empirical model.

The Sample and Empirical Model

The data for this analysis were taken from the 1984 U.S. Ownership Study conducted by the Life Insurance Marketing Research Association (LIMRA). The study contains information on demographics and incidence and amount of insurance owned by 8,401 persons. From this, a sample of 1,071 married couple households were selected in which the husband was employed full-time and there existed information on each of the variables included in the statistical model.

To establish refined, empirically based insights into the demand for life insurance, three dependent variables measuring life insurance demand on the life of the wife were chosen for analysis: total face value of all life insurance, total face value of permanent life insurance, and total face value of term life insurance. In order to compare the potentially different effect of each independent variable on each dependent variable, each dependent variable was posited to be a function of the same vector of independent variables. Given the large proportion of the sample of wives that did not have any life insurance, Tobit analysis was used to test the previously stated hypotheses. Table 1 contains both a list of the independent variables with their measurement defined and mean value and a list of the dependent variables with the percentage of the sample that had non-zero observations.

It will be noted that the average income and average networth of the sample of households is greater than that of the U.S. population in 1984. Median income is $26,250 while median networth is $65,297[2]. The average age of the wife is 39.75 years, while the measure for education of the head of household (the husband) was an average category score of 4.44 on a scale of 7 with 4 representing completion of high school. Eighty percent of the sample were homeowners - an indication of why the average level of networth was so high. On average, the households had 11.81 years of total dependent years remaining in the household. This variable existed in the data as was calculated as the sum of all children's years until reaching the age of eighteen. Forty-four percent of the female spouses worked full-time and thirteen percent worked part-time with 43% not being employed outside the home.

With respect to the dependent variables it can be seen that 39.31% of the sample had some form of life insurance on the wife. On average, including the observations that had a value of zero, there was $8,604 of life insurance on the wife. Permanent life insurance was held by 31.65% of the sample with a zero-mean holding of $3,607 of life insurance, while only 9.71% had term insurance with a zero-mean value of $4,987.

Results

The normalized coefficients for the estimated Tobit equations are presented in Table 2.[3] The discussion will proceed independent variable by independent variable, while noting differences in results for each demand equation for each dependent variable.

Age was estimated to weakly (.10 level) but positively affect the total demand for life insurance on the life of the wife. However, when separate equations for each type of life insurance, permanent and term, are estimated the results differ. As would be expected, the demand for permanent life insurance, similar to the total demand for life insurance, increases with age. On the other hand, the demand for term life insurance decreases, *ceteris paribus*, with age. These contrary results would indicate that permanent insurance coverage is maintained as either a retirement savings vehicle or to provide for estate liquidity as people age. Most importantly, the price of term insurance increases with age and, given the term insurance equation results, it appears that consumers react to the increase in price, as well as the possible decrease in insurance need, by purchasing less term insurance.

Greater household income was estimated to increase the demand for life insurance on the life of the wife for both total life insurance and permanent life insurance. However, the equation for permanent insurance had a significant coefficient for the square of income, which supports the conclusion that the demand for insurance increases at a decreasing rate. Income was a nonsignificant factor to the demand for term life insurance. In total, it appears that income increases the demand for the tax deferred savings feature of permanent insurance products as well as total life insurance demand; however, term insurance demand is not affected by household income.

The variable measuring the networth of the household indicates that total life insurance demand is not significantly related to the level of networth. This is interesting since it is clear that household wealth could be used as a substitute for life insurance proceeds should the wife die. Therefore, greater levels of networth should reduce life insurance demand. It is interesting, however, that when the life insurance holdings are divided into permanent and term life insurance holdings, the coefficients on the networth variables become weakly significant and, when compared across equations, opposite in sign. Greater networth decreases the demand for permanent life insurance on the life of the wife at a decreasing rate. Interpretation of these results would indicate that wealthier households do not perceive the advantages of saving in the form of cash value life insurance, while households with lesser wealth demand greater permanent life insurance, possibly sold to them as a vehicle to acquire greater wealth. Households with greater wealth, *ceteris paribus*, purchase greater amounts of term insurance on the life of the wife at a decreasing rate. These results might indicate a bequest motive among wealthier households.[4]

Holdings of total life insurance on the wife is significantly positively related to the level of education of the head of household. This would indicate that there is greater recognition of need on the part of the household the greater the level of education. In addition, to the extent there is, on average, matching in the marriage market by levels of education, and to the extent that income is correlated with education, this result may be measuring some of the human capital contribution of the female spouse. However, the results indicate that this demand is not for permanent life insurance but, rather, for term life insurance. Perhaps it is the case that households with greater education know more about insurance products and saving media, or can more easily learn about them, and that knowledge results in their purchasing term insurance.

Homeownership is positively related to the demand for life insurance for total, permanent life, and term life insurance products. Two factors would explain this result. First, the ownership of a home is typically coincident with home mortgage debt which increases the demand for life insurance. Secondly, homeownership indicates a greater need for home maintenance and, hence, a greater value to the time of the homemaker.

The greater the number of remaining years of support of dependents is, as expected, positively related to the demand for life insurance on the life of the wife; the relationship holds for both types of life insurance. The greater the need for support, the greater the insurance to cover that need.

The employment status of the wife is related to insurance demand. Interestingly, a wife who works part-time has significantly more total life insurance than a wife who does not work. Employment status is not significantly related to the demand for permanent life insurance on the life of the wife. However, employment status great affects the demand for term life insurance. For wives who work either part-time or full-time there is a greater demand for term life insurance than if they do not work in the market. As the dependent variables are a measure of the amounts of individually purchased life insurance, this result is not due to the availability of life insurance through their place of employment nor as a fringe benefit. Therefore, it is a reflection of the need to insure her greater financial contribution or, possibly, to insure the greater needs (in terms of consumption standards) that led her to the workforce.

Conclusions

What do the results suggest about the demand for life insurance on the life of the wife?

First, financial variables do play a role, albeit weak, in determining the demand for life insurance. Greater income increases that demand for life insurance, as there is likely to be a higher level of living to be protected. Also, a higher income makes it possible to purchase more financial security, just as it makes possible the purchase of a higher consumption level. However, with respect to wealth the relationship is not as clear and consistent. Wealth decreased the demand for permanent life insurance while increasing the demand for term life insurance. Reasons for this have been discussed above. The results point to a possible specification error in other life insurance work, in which the total demand for life insurance (all types summed) is the dependent variable. To a point, the demand for permanent insurance decreases, while the demand for term increases with wealth. These disparate relationships need to be explored to help financial planners, insurance salespersons, and consumers understand the products that may, on average, be most satisfactory while simultaneously improving the marketing efficiencies of life insurance companies.

Other socio-economic variables are also significant. While homeownership and total remaining dependent years were consistently positively related to demand for insurance on the life of the wife, education was not significant to the purchase of permanent life insurance products. This may indicate that permanent life insurance products are sold to, rather than sought by, consumers and that every educational level is susceptible to such marketing efforts.

Finally, employment status does have an effect on life insurance demand. This was particularly true for the demand for term life insurance products; market employment was found to increase the demand for term life insurance.

This research sheds some light on the demand for life insurance on the life of the wife; however, it by no means answers all relevant current questions. The data are from 1984 and much has changed in both the life insurance market and the employment/education status of women. These results should be re-examined with a more contemporary data set. It is conceptually clear that the market earnings and value of other economic contribution of the wife are what life insurance insures - not total household income. From an empirical perspective, it is unfortunate that there was not information on the level of earnings of the wife to use as an independent variable in this analysis. However, the research does control for employment status of the wife, which may proxy much of the information that would be contained in a measure of the wife's income.

Perhaps most important in this research is the apparent deficit in life insurance on the life of the wife in the sample. While it is the historical case that the husband was the primary breadwinner, it is increasingly the case that the goals of the family are dependent on both spouses' earnings. To the extent the employment of one spouse is seen as adequate to meet the financial needs of the other spouse, the family may be overlooking the lower level of living that may await the family should the spouse die. Given this, a family goal centered approach in the family's own planning, in the sale of life insurance, or in the counseling of financial planning clients, would be beneficial to both parties involved in the transaction.

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Endnotes

1. It would be desirable to consider the income of the wife, either relative to that of the husband or in absolute value. However, the data to be analyzed do not contain information on her income separately from that of the household. They do report whether she is employed full-time, part-time, or not employed which can be expected to proxy her financial contribution to the household.

2. Household income and net worth were reported as categories. These were converted to dollar figures by taking the midpoint of the range of each category and assigning that value to each category. For the top, open ended category, a Pareto distribution estimation technique was employed (Miller, 1966). The medians were calculated by assuming a uniform distribution across the category containing the 50th percentile household and interpolating the value.

3. Since the purpose of the paper is to test hypotheses with respect to the effect of the independent variables on the demand for life insurance, only the normalized coefficients with their respective standard errors will be presented. In addition, it should be noted that, given the econometric specification, the existence of multicollinearity may exist. If so, the standard errors of the coefficients may be biased upwards and the probability of a Type II error enhanced results in a more conservative test of the hypotheses.

4. A suggested interpretation by a colleague is that the direction of effect may be the opposite. That is, those households who purchase term life insurance rather than permanent life insurance have greater wealth as a result, because of the lower premiums for a given amount of insurance and the potentially greater gains from alternative savings/investment media. Such a simultaneous decision has not been explored.

Table 1: Variable Definitions and Means/Medians

Variable	Definition	Mean/Median
AGE	Age of the wife in years	39.75
INCOME	Income of the household	$26,250 (median)
INCSQR	Income Squared	
NETWORTH	Networth of the household	$65,297 (median)
NETSQR	Networth squared	
EDUCATION	Education of the husband	4.44
HOMEOWN	1 if homeowner, 0 if not	.80
TOTDEP	Total number of dependent years for the household	11.181
FULLTIME	1 if wife works full time	.44
PARTTIME	1 if wife works part time	.13

Dependent Variable	Mean	Percentage non-zero
Total Life Insurance	$8,604	39.31%
Permanent Life Insurance	$3,607	31.65%
Term Life Insurance	$4,987	9.71%

Table 2: Normalized Coefficients, Tobit Equation Results, Amount of Life Insurance on the Life of the Wife (N=1071)

	Dependent Variables		
Independent Variable	Total Life Insurance	Permanent Life Insurance	Term Life Insurance
AGE	.6486E-02*	.1341E-01****	-.1801E-01***
	(.4399E-05)	(.4617E-02)	(.7202E-02)
INCOME	.7175E-05*	.1235E-04**	.6893E-05
	(.5471E-05)	(.5767E-05)	(.8495E-05)
INCSQR	.7919E-12	-.6452E-10*	-.1976E-11
	(.3952E-10)	(.4214E-10)	(.5857E-10)
NETWORTH	.1983E-07	-.9499E-06*	.1221E-05*
	(.5702E-06)	(.6042E-06)	(.8309E-06)
NETSQR	.1479E-13	.6710E-12**	-.7082E-12*
	(.3581E-12)	(.3798E-12)	(.5186E-12)
EDUCATION	.7792E-01****	.2667E-01	.9354E-01***
	(.2707E-01)	(.2851E-01)	(.3943E-01)
HOMEOWN	.2762****	.1691*	.3386**
	(.10472)	(.1091)	(.1672)
TOTDEP	.1158E-01****	.5009*	.1545E-01****
	(.3381E-02)	(.3634)	(.4520E-02)
FULLTIME	.7957E-01	-.3234E-01	.2811**
	(.8395E-01)	(.8797E-01)	(.1294)
PARTTIME	.2088**	.8697E-01	.4543****
	(.1126)	(.1190)	(.1610)
CONSTANT	-1.6580	-1.6531	-2.0970
Log-likelihood	-5421.18	-4251.01	-1536.53
X^2_{941}	74.65****	33.28****	72.89****

Standard Errors in Parentheses

* significant at the .10 level

** significant at the .05 level

*** significant at the .01 level

**** significant at the .005 level

The Demand for Consumer Installment Credit : Stock Adjustment Model

Hyuncha Choe, Purdue University[1]
Dixie P. Johnson, Purdue University[2]

The analyses of the demands for consumer installment credit of homeowners and renters were performed using a stock adjustment model with four year panel data from the 1983 and 1986 Surveys of Consumer Finance. More than 80 percent of consumer installment credit was own-adjusted during this period of time. The adjustment process of consumer installment credit depended on the disequilibrium in other portfolio components. However, neither credit card debt nor house value had any effect on adjustment in consumer installment credit for all sample groups.

Introduction

From 1983 to 1985 consumer installment credit outstanding increased almost 15 percent per year. While the growth rate of consumer installment credit after 1986 went down to 7 percent, the installment debt to income ratio was approaching 19 percent (Avery, Elliehausen, and Kennickell, 1987). Although consumer installment credit has increased substantially, households with consumer debt were likely to hold liquid assets and had sufficient liquid assets to repay all their outstanding consumer debt (Sullivan, 1987). This finding is consistent with Tobin's hypothesis (1957) that rational households are likely to have optimal levels of both debt and liquid assets at the same time.

In 1986, the majority of credit users had financial assets greater than consumer debts. This fact implies that the change in consumer credit should be carried out in the context of the consumer portfolio decision (Avery, Elliehausen, and Kennickell, 1987). That is, the changes in installment credit stock are interrelated to the adjustment mechanisms of other portfolio components in disequilibrium since there are lags in the adjustment process of capital accounts because of transactions costs, household inertia and the nature of capital accounts.

Therefore, the purpose of this study is to examine the adjustment process of consumer installment credit as each component of household portfolio and economic and socio-demographic aspects of households change. This study is set in a portfolio context which includes house value, mortgage debt and credit card debt as well as other components of the debt portfolio with a four year reinterview panel.

Previous Research in Consumer Installment Credit Use

Consumers often make decisions to save or borrow in order to rearrange consumption between various time periods because of inconsistency of income stream over their life cycle. If the utility from current consumption with credit is greater than the costs of credit, consumers are likely to borrow to get higher utility by increasing current consumption.

One area of study concerning consumer credit use of individual household unit has emphasized the factors associated with the demand for consumer credit from the point of the stock at a moment in time (DeLuca, 1985; Hira, 1990; Hunter, 1966; Jensen and Reynold, 1986; Lansing, Maynes, and Kreinin, 1957; Sullivan and Warden, 1986; Watts and Tobin, 1960). Other studies have focused on consumer credit in the consumer portfolio context from the point of flows over a period of time (Bryant, 1986a; Bryant, 1986b; Dunkelberg and Stafford, 1971; Motley, 1970; Tobin, 1957; Watts and Tobin, 1960).

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[1] Doctoral Candidate,
Department of Consumer Sciences and Retailing.

[2] Associate Professor,
Department of Consumer Sciences and Retailing.

Since the first empirical work of changes in consumer credit with panel data(Tobin, 1957), Watts and Tobin (1960) studied both stocks and flows of the capital account of the household. The results supported their hypothesis that a rational household tended to maintain a certain balance in their capital account between liquid assets and debts. But because the analysis was based on one-period cross-section data and limited in its ability to provide generalizations about the dynamics of capital account changes in response to altered external or life cycle situation, they recommended the use of panel study.

Motly (1970) estimated household demand for assets - money, saving deposits, debt and real estates - with a short-run adjustment model using quarterly aggregate data. The own-adjustment coefficient of debt was 0.496 and the cross-adjustment coefficients were negative as expected. With this result, he suggested that the demand for any asset should be treated within a competitive process of adjustments; these adjustments were viewed as mutually interdependent.

An empirical study of the use of consumer installment debt in the framework of a stock adjustment model of behavior was carried out by Dunkelberg and Stafford (1971) using a two year (1967-68) reinterview panel. The estimated own-adjustment effects of installment credit was about 0.5, which meant that 50 percent of the gap between the desired and actual stock of installment credit was reduced in a given year. One of the limitations of this study was that house value and mortgage debt, which have a much longer adjustment period, were excluded from the analysis since the data were only a two year reinterview panel.

Bryant (1986a) investigated both consumers' assets and debts in a portfolio context. The short-run effects of exogenous variables and partial adjustment coefficients of owned housing, home mortgages, cars, car debts, and other debts were calculated using panel data from the 1977-78 Survey of Consumer Credit. Unfortunately, consumer credit card debt, which played a great role in consumer borrowing, was not included in the model.

Bryant (1986b) estimated short-run effects and partial adjustment rates of holdings of owned housing, cars, consumer durables, liquid assets, home mortgage, store debts and loan debts for poor rural wage-working black and white households with data from the 1970-1973 Rural Income Maintenance Experiment. But this study was limited to rural households.

These previous empirical analyses of the consumer demand for assets and debts using a model of the short-run adjustment process were restricted by one or two year panel data. This restriction does not allow researchers to include portfolio components of household value and mortgage debt, which have a much longer adjustment period than the other components of the debt portfolio. In addition, consumer credit card debt, which plays a great role in consumer borrowing today, has not been considered in the consumer installment credit adjustment process. Thus, this study is set in a portfolio context which includes house value, mortgage debt and credit card debt as well as other components of the debt portfolio.

The Model and Variables

The household is likely to maintain balance between debts and assets as any other component in the household portfolio changes. Theoretically, the desired demand for assets and debts is determined by market rates of return; that is, interest rates, and income. But the information on rates of return for each component in the household portfolio is not available in the study with disaggregate data. Instead, based on previous studies (DeLuca and Bowers, 1985; Hira, 1990; Hunter, 1966; Jensen and Reynold, 1986; Lansing, Maynes, and Kreinin, 1957; Sullivan and Warden, 1986; Watts and

Tobin, 1960), it is assumed that the desired demand for assets and debt of a household unit at the period of t is determined by characteristics of the household. The functional form of this relationship is:

$$S^{*}_{ijt} = \alpha_x X_{it} + e_{it} \qquad (1)$$

where, S^{*}_{ijt} is the household ith desired demand for assets and debts in year t (j= consumer installment credit(D), non-installment consumer debt(ND), household durables(HD), liquid asset(LA), credit card debt(CD), house value(HV), mortgage debt(MD), and net worth (NW)). X_{it} is a vector of exogenous variables determining S^{*}_{ijt}. α_x is a vector of long-run effects of X_{it}. And e_{it} is a vector of random error term.

However, households are not able to adjust their debt holdings in the short-run and some divergence exists between actual and desired stock of debt due to the adjustment lags. The general stock adjustment model assumes that actual net changes in jth stock of debts and assets in the period between t-1 and t is a sum of fixed proportions of the changes of stocks required to bring the stock to its desired level (Deaton and Muellbauer, 1981).

In the household portfolio context, the annual change in the level of consumer installment credit will be the sum of the partial response to disequilibria in each component of the portfolio. Thus, an adjustment process of consumer installment credit can be expressed as follows:

$$S_{idt} - S_{id(t-1)} = \beta_{dd} (S^{*}_{idt} - S_{id(t-1)})$$

$$+ \sum \beta_{dj} (S^{*}_{ijt} - S_{ij(t-1)}) + r_{it} \qquad (2)$$

where, S_{idt} and $S_{id(t-1)}$ are the household ith actual holdings of consumer installment credit in year t and t-1. β_{dd} is the own-adjustment rate of consumer installment credit. β_{dj} is the cross-adjustment rate of assets and other debts ($j \neq d$). And r_{it} is the vector of random error term.

Substituting equation (1) into equation (2), the following empirical model is constructed for four year panel data:

$$S_{idt} - S_{id(t-1)} = \gamma_x X_{it} + \gamma_{dd} S_{id(t-1)}$$

$$+ \sum \gamma_{dj} S_{ij(t-1)} + v_{it} \ (3)$$

where, γ_x is the matrix of short-run effects of exogenous variables (income related variables, household size, age, education, sex, marital status, and race of household head, region of residence, employment status variables, and attitudinal variables). γ_{dd} and γ_{dj} are the matrix of coefficients on the lagged assets and debts holdings. And v_{it} is a vector of random error term. It is the case that $\beta_{dd} = -\gamma_{dd}$ and $\beta_{dj} = \gamma_{dj}$.

The variables used to estimate the empirical model are defined as follows. The dependent variable, change in consumer installment credit, is the change in the amount outstanding on regular payment consumer loans for auto, home improvement, major durable, and personal expenses between 1983 and 1986. As economic variables, income, income squared, and negative income change are used. Because of the non-linear relationship between use of installment debt and income (Dunkelberg and Stafford 1971; Lansing, Maynes, and Kreinin 1957), a squared term is included.

For socio-demographic characteristics, household size, age, sex, education level, race, and marital status of household head as well as region and employment status are included. Household size and age of head are used as a proxy for the life cycle variable. Two variables, number of earners and changes in the employment status of household head and wife, are included as employment status variable in the model. The reason for including the change in employment status variable is that this short-run adjustment of labor force participation could be an alternative to borrowing (Dunkelberg & Stafford, 1971).

The economic and socio-demographic variables are from 1986 data and the attitudinal and lagged stock variables are from 1983 data. The attitude toward credit is from 1983 because this variable is not available from 1986 and, this basic attitude has not changed substantially during the last three decades (Pearce 1985).

Because 1983 data do not contain the data for stock of consumer durables, the gross amount spent on the purchase of cars, furniture, appliances, recreation items or additions and repairs to home between 1983 and 1986 is used. The coefficient for this variable will be interpreted as the short-run effects of durables purchased.

All variables for capital accounts of 1983 were adjusted using the 1986 consumer price index.

The Data and Analysis

To estimate equation (3), the data are taken from a four year reinterview panel, the 1983 and 1986 Surveys of Consumer Finances, sponsored by the Board of Governor of the Federal Reserve System and six other federal agencies. The use of panel data allows researchers to examine the changes in consumer debt in response to changes in income and socio-demographic aspects of households and disequilibria in the portfolio of the households.

Among a sample of 2,822 households for 1986, the sample used for this study excludes high-income respondents (359 cases) and duplicate households (41 cases). A total of 31 households with heads aged 24 and under in 1986 is excluded because this group is inappropriate for analysis of changes between two periods. This age group is unlikely to represent the population of households of their cohort (Avery and Elliehausen, 1988). Those who did not report complete answers to the dependent and independent variables used in this study in either 1983 or 1986 are also excluded. After these adjustments, the final sample consists of 2302 households.

All of the data have been weighted. The use of the weight is recommended for analysis involving changes for individual households between 1983 and 1986 (Avery and Elliehausen, 1988).

Since homeowners and renter households are not a homogeneous group due to the significant differences in economic and socio-demographic characteristics, it is believed that not only the slope and intercept parameters are distinct but also the error variances are different as well (Pindyck and Rubinfeld, 1981). Watts and Tobin (1960) also suggested that major decisions about households' capital accounts were affected by homeownership. Thus the sample used in this study was separated into two groups by the status of homeownership in the 1986. There were 1784 homeowners and 518 renter households in the sample.

Table 1 showed the summary statistic for socio-demographic characteristics and financial status of the sample households - by homeownership. The average outstanding consumer installment debt of homeowners is $2176 in 1983 and $2419 in 1986 compared with $1415 and $1652 of renters. In 1983 renters had more non-installment debt($1078) than homeowners($936) while in 1986 this declined to $260(renters) and

Table 1
Weighted Descriptive Statistics for Sample Households[a] - Total and by Homeownership, 1986

Variables	Total	Home-owner	Renter
Consumer installment debt ($)	2171.92 (1931.28)[b]	2418.77 (2176.32)	1652.03 (1415.21)
Total household income ($)	28490.33 (26968.25)	32334.48 (30918.68)	20394.40 (18648.52)
Liquid assets($)	16173.55 (11818.98)	20331.67 (15258.36)	7416.42 (4576.55)
Credit card debt($)	669.77 (378.96)	741.22 (430.29)	519.28 (270.86)
House value($)	50177.42 (44557.49)	74003.00 (62260.46)	0.00 (7274.47)
Mortgage debt($)	13550.47 (10744.46)	19984.59 (14343.67)	0.00 (3164.43)
Non-installment debt($)	387.24 (981.65)	447.69 (935.86)	259.93 (1078.07)
Net worth($)	101743.61 (89448.02)	137349.07 (118822.99)	26757.38 (27583.40)
Durables purchased($)	7725.55	9349.75	4304.93
Socio-demographic variables			
Household size(person)	2.73	2.82	2.55
Age of head(years)	49.80	52.33	44.45
Education(years)	12.29	12.38	12.11
Sex (Female: %)	24.88	19.44	36.35
Marital status(Married: %)	62.82	73.14	41.08
Number of earners(two: %)	31.76	35.29	24.32
Race (Non-white: %)	18.31	12.66	30.21
Region (North-central: %)	26.51	28.21	22.96
(South: %)	35.17	36.26	32.89
(West: %)	18.78	16.83	22.88
Homeownership(Owner: %)	67.80	100.00	0.00
Employment status of head (Employed: %)	62.21	61.62	63.45
Employment status of wife (Employed: %)	42.63	47.27	32.85
Attitudinal variables			
Attitude towards credit			
(Positive attitude: %)	44.73	42.90	48.59
(Negative attitude: %)	23.27	22.11	25.73
Number of observations	2302	1784	518

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[a] Means and percent of total sample in each group

[b] 1983 values in parentheses(in 1986 dollars)

$448(homeowners). Average household income of renters is about two-thirds of that of homeowners in both years. Homeowners have 3 times more liquid assets and 5 times greater net worth than renters in 1986. Renters are more likely to be female-headed, unmarried, younger, non-white, and less than one earner households. More wives are employed in homeowners' households than renter households.

Since there is no truncation problem in the dependent variable, which has continuous negative and positive values, as well as no autocorrelation in the residuals and no significant multicollinearity between independent variables, equation (4) is estimated using the ordinary least square for the total sample and for the two groups, homeowners and renters.

To test the null hypothesis that the set of coefficients in the homeowners equation is identical to the set of coefficients in the renters equation, a Chow test is employed using the F statistic (Chow, 1960). The null hypothesis is rejected at the 5 percent level of significance. The test result indicates that it is incorrect to assume equal coefficients and error variances between homeowners and renter households.

Empirical Results

Table 2 and 3 summarize the regression results of equation (3) for three separate sample groups of a total of 2,302 households, 1,784 homeowners, and 518 renters, respectively. The results of the F-test for the model show that all equations are statistically significant at the .01 level. Each model explains about from 19 percent(renters) to 47 percent(homeowners) of changes in consumer installment debt holdings between 1983 and 1986. The low value of R^2 of renters may be due to more homogenous characteristics of these households than homeowners.

The Own- and Cross- Adjustment Effects

The estimated own- and cross-adjustment rates of consumer installment debt are presented in Table 2. The own- adjustment rates for the total sample and the two subgroups, homeowners and renters, are highly significant and positive. This positive relationship indicates that as the gap between desired and actual stock of consumer installment debt increased, the more likely are the households to use installment credit.

The own-adjustment rate of consumer installment debt for total households is .844; .817 for homeowners and .937 for renters. These rates are interpreted as follow : 84.4 percent of any differences between the desired and actual stock of consumer installment debt of total households were closed in the last four years. These own-adjustment rates are much higher than those of Dunkelberg and Stafford (1971) using a two year panel. The fact that renters have higher own-adjustment rate than homeowners means that renters adjust faster than homeowners to desired level of consumer installment credit holdings. This result also indicates that the own-adjustment effect is a more important part of the equilibrating process for renters than for homeowner households.

Table 2
Weighted Stock Adjustment Rates of Consumer Installment Credit

Portfolio components	Total	Homeowners	Renters
Installment debt	.844*** (29.83)[a]	.817*** (34.99)	.937*** (10.03)
Liquid assets	.007 (1.44)	.007** (2.17)	-.003 (.09)
Credit card debt	-.200 (1.37)	-.174 (1.56)	-.206 (.33)
Mortgage debt	.007 (.94)	.013** (2.19)	-.032 (.74)
Non-installment debt	-.020 (1.11)	-.032* (1.81)	-.017 (.36)
House value	.002 (.68)	-.001 (.21)	.021 (.92)
Net Worth	.002** (2.18)	.003*** (4.14)	-.001 (.35)

*** significantly different from zero at .01 level
** significantly different from zero at .05 level
* significantly different from zero at .10 level
[a] t-values in parentheses

The estimated cross-adjustment rates show that the adjustment process of consumer installment debt depends on the disequilibrium in other portfolio components. For total households and homeowners, adjustment in consumer installment debt depends on the disequilibrium in net worth. The positive net worth estimates indicate that net worth is a complement for the use of consumer installment credit.

Homeowners' adjustment effect in the stock of consumer installment debt is highly dependent on the disequilibrium in liquid assets, mortgage debt, non-installment debt, and net worth. It is found that homeowner households with high initial holdings of liquid assets and net worth stock try to reduce further use of installment debt. As expected, there is a trade off between changes in consumer installment credit use and stock of credit card debt and non-installment debt. The cross-adjustment rates of credit card debt and non-installment debt are negative, which means the competitive relationship with installment debt and that of mortgage debt are unexpectedly positive.

Table 3

Weighted Short-Run Effects of Exogenous Variables on the Change in Demand for Consumer Installment Credit

Independent Variables	Total	Homeowners	Renters
Economic variables			
Income	.003 (.31)^{a}	.001 (.17)	.07 (1.07)
Income squared	-3E-9 (.23)	5E-10 (.05)	-8E-8 (1.19)
Negative income shock	8.83 (.03)	-86.74 (.39)	478.99 (.58)
Socio-demographic variables			
Household size	82.22 (.78)	99.33 (1.09)	9.70 (.03)
Age	-9.98 (1.05)	-13.62 (1.54)	-17.74 (.65)
Education	52.29 (1.11)	50.58 (1.26)	43.00 (.29)
Sex (female)	-141.30 (.33)	266.07 (.59)	-489.09 (.49)
Region			
(north-central)	306.85 (.86)	9.76 (.03)	1034.67 (.94)
(south)	-268.49 (.79)	-207.94 (.71)	-386.88 (.38)
(west)	-368.71 (.95)	-456.83 (1.33)	-338.46 (.31)
Marital status			
(married)	-235.46 (.53)	-787.58*(1.82)	111.06 (.09)
Race			
(non-white)	-224.49 (.65)	144.17 (.44)	-673.96 (.72)
Number of earners			
(two)	688.16**(2.11)	540.88**(2.08)	606.80 (.52)
Employment status change of head	1949.72***(3.67)	893.20* (1.75)	3208.27** (2.42)
Employment status change of spouse	986.74***(2.90)	463.95* (1.64)	2238.47* (1.98)
Attitudinal variables			
Positive attitude	-329.84(1.18)	-283.83(1.22)	-402.06(.45)
Negative attitude	-5.66(.02)	-347.51(1.25)	861.29(.82)
Durables purchased	.19***(14.33)	.20***(20.20)	.110* (.74)
constant	337.77 (.33)	892.17 (.98)	282.910 (.09)
Adjusted R^2	.33	.47	.19
F-value	45.62***	64.37***	5.86***

*** significantly different from zero at .01 level.

** significantly different from zero at .05 level.

* significantly different from zero at .10 level.

^{a} t-values in parentheses

For homeowners, consumer installment debt and mortgage debt adjustments are complements.

Neither credit card debt nor house value have any effect on adjustment in consumer installment debt for all sample groups. The adjustment in consumer installment credit using house value seems to take a longer time than expected.

Short-Run Effects of Exogenous Variables

Among 15 exogenous variables, only durables purchased and variables measuring employment status have statistically significant effects on the use of consumer installment credit in all three equations for the total, homeowners, and renter households.

Durables purchased has significant positive impact on changes in the holdings of consumer installment credit. A dollar increase in the amount spent for durable goods purchased induces \$.19, \$.20, and \$.11 increases in the consumer installment credit holdings of total, homeowners, and renters, respectively. The lower estimate for renters indicates that they are less likely to use installment credit for purchasing durables than homeowners.

Both employment status changes of head and wife have strong positive effects on the change in installment credit holdings for all sample groups. For households where head is employed in 1986 but was unemployed in 1983, holdings of consumer installment credit increase by \$1949.72 for total households, \$893.20 for homeowners, and \$3208.27 for renters. When the wife participated in the labor force in 1986 (but not in 1983), holdings of installment credit increase by \$986.74 for total, \$463.95 for homeowners and \$2238.47 for renters.

These results suggest that the levels of installment credit are significantly affected by the supply side of consumer credit. Jappelli (1990) found that employment status related factors explained 16 percent of credit rationing, a constraint regarding credit use.

For renters, the effects of employment status change of household head and wife are much larger than for the homeowners. Among many factors affecting lenders' decisions on granting credit, employment status may be a more important factor for renters than homeowners.

The positive relationship between changes in installment credit use and wife's labor force participation is similar to Rosett's (1958) but is not consistent with Dunkelberg and Stafford's (1971) finding.

Number of earners in the households has significant positive effect in equations for total and homeowner households. Among the total sample, two-earner households hold $685.16 more consumer installment credit than others. Two-earner homeowner households hold $540.88 more installment credit than other homeowners. Number of earners is not significant for renters.

For homeowners, marital status shows significant negative effect on the change in the use of installment credit. Married homeowners decrease in the credit obligations by $787.58 compared with non-married homeowners.

In contrast to other studies (Bryant 1986a; Bryant 1986b), this study found that income related variables do not have any significant effects on the change in the use of consumer installment credit. This result may be due to the inclusion of the durable goods purchased variable.

Conclusions

The findings of this research show that more than 80 percent of consumer installment debt is own-adjusted during the period of time studied. Almost all divergences between desired and actual level of consumer installment debt in renter households are direct adjusted within this period of time. The own-adjustment effect is a much more important part of the equlibrating process for renters than for homeowners. These findings may be due to the lack of income and other stocks of capital accounts among renters.

For homeowners, the adjustment process in the stock of consumer installment debt is highly dependent not only on disequilibrium in itself but also on disequilibria in liquid assets, mortgage debt, non-installment debt, and net worth. This implies that the demand for any capital accounts should be estimated in the context of consumer portfolio decision.

The spending for durable goods purchased has encouraged the use of consumer installment credit between 1983 and 1986. Homeowners are more likely to use consumer installment credit to finance the purchase of durable goods than renters.

The positive effects of changes in employment status of household head and wife indicate that the labor force participation induces the use of consumer installment credit. These positive effects are especially strong in the renters equation. This finding further implies that renters are more likely to be credit rationed than homeowners in the credit market.

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The Value of Time in Household Work: Estimates from the NLS Data

Karen A. Duncan, The Ohio State University[1]

The reservation wage procedure was used to estimate the value of time in household work. These estimates were compared to those obtained by the housekeeper cost method and to reservation wage estimates obtained in a previous study. The reservation wage estimates for nonemployed wives where much larger than those for employed wives.

Interest in placing a value on the productive activities of households dates back to the early part of the century. Kinsey (1986) notes that one of the early reasons for estimating the value of home produced goods and services was "to document how much household production increases the welfare both of individuals and of nations" (p. 187), often with the aim of trying to add the value of household production to the gross national product (GNP) (Gauger, 1973). Because household work does not show up in the national income and product accounts unless the household hires someone in the marketplace to perform the work, economists have long recognized that the GNP underestimates the value of the goods and services produced by a society (Gauger, 1973). Further, society's tendency to value only that on which it can put a dollar value leads to the societal perception of household work as valueless (Hefferan, 1982; Walker, 1980).

A review of the various methods of valuing home production is found in Kinsey (1986). The procedure of choice is the reservation wage method: an opportunity cost measure of household work corrected for self selection bias. Hence, it has important statistical advantages over other methods of valuing time in household work. In this paper, the reservation wage procedure will be used to estimate the value of time in household work. The research replicates the earlier work of Zick and Bryant (1983) on more recent and representative data from the National Longitudinal Surveys. The estimates obtained will be compared to those obtained using the housekeeper cost method and to the reservation wage estimates obtained by Zick and Bryant (1983) in constant 1987 dollars.

Methods of Valuation

Unlike market cost methods, opportunity cost methods of valuing the time in household work have a sound theoretical basis. Opportunity cost measures are based on the theoretical argument that, at equilibrium, households allocate the time of members in activities so that the marginal value of time is equal in all activities. The opportunity cost of time in household work is valued at the cost of the next best alternative given up, namely market work. Other advantages of this approach are that the estimates obtained are the values that households would place on the household work (Zick & Bryant, 1983) and that it is the preferred approach for measuring economic welfare (Murphy, 1982).

Opportunity cost methods value time in household work at the wage the household worker receives or could receive in the labor market. This is straightforward if the household worker also works in the labor market but problematic when the worker does not. In fact most criticisms of opportunity cost methods involve the estimation procedure (Zick & Bryant, 1990). The solution used by researchers has been to match those working full-time in the home with a group of employed individuals with similar characteristics and assign the full-time homemakers the wage of the employed group. However, this has not been a satisfactory solution because these "identical" individuals are not identical with respect to employment status. If individuals choose employment status, then this choice must be based on factors which are present, although not observable (Heckman, 1979; Zick & Bryant 1990).

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[1] Graduate Associate, Department of Family Resource Management

Heckman's (1976) reservation wage procedure, which corrects for this self selection bias present in the employment status decision, has been used to estimate the value of time in household work. Although computationally complex, reservation wage estimates are the values that households place on their household production; they are theoretically justified; and they are not subject to the methodological problems of previous opportunity cost measures.

Theoretical Model

For women employed in the labor force, the opportunity cost of nonmarket time is equal to or less than their market wage rate since employed women may be paid more than the wage required to draw them out of homework. For full-time homemakers, the opportunity cost is greater than their potential market wage. That is, these women are so productive in the home that the wage required to draw them out of homework and into market work is more than the wage they could earn in the market. The reservation or shadow wage is the wage at which the individual is indifferent between time spent in market work and time spent at home. The value of household work is the reservation wage multiplied by the time spent in household work. An explication of the household production model underlying the reservation wage may be found in Bryant (1990).

Because the wage rate is estimated for nonemployed wives using the subsample of employed wives, self selection bias exists. Heckman (1979) notes that self selection bias occurs because market wages are observed only for employed women whose market wages are greater than their home wages. Thus, the first step of the procedure is to correct for the self selection bias by estimating an equation for the probability of the wife's labor force participation.

In the second step a two equation system is used to estimate the reservation wage:[1]

$$\mathbf{W} = \mathbf{X}\alpha + \mathbf{e}_1 \tag{1}$$

$$\mathbf{W^*} = \mathbf{Z}\beta + \mathbf{H}\delta + \mathbf{e}_2 \tag{2}$$

where: W = the market wage rate

X = a vector of characteristics determining market productivity

W* = the reservation wage

Z = a vector of characteristics determining home productivity

H = hours of market work

Two assumptions are made. First, it is presumed that **W*** = **W** for employed wives and that **W*** > **W** for nonemployed wives. Thus, the reservation wage for nonemployed wives is not constrained to equal the wage the individual could have earned in the labor market but rather, it represents the wage required by the individual to make her indifferent between the last hour of home production and an hour of market work.

Second, it is assumed that the market wage does not vary with the number of hours worked in the market while the reservation wage varies with the number of hours worked. Zick and Bryant (1990) note that this reflects a model where the marginal productivity of time in the home varies with the amount of time spent in household work, but marginal productivity in market work is invariant to hours worked (Zick & Bryant, 1990). The justification for this assumption is that firms pay individuals at fixed rates, that is, wages are invariant with productivity whereas this is not the case for the household.

The reservation wage is not observable, however, by equating equations (1) and (2) an estimable labor supply function may be derived:

$$\mathbf{H} = \frac{1}{\delta}(\mathbf{X}\alpha - \mathbf{Z}\beta + \mathbf{e}_1 - \mathbf{e}_2) \tag{3}$$

After estimating (1) and (3), the reservation wage may be retrieved providing that **Z** does not include at least one element of **X** (Heckman, 1976).

Data

The value of time spent in household production is estimated for young women using data from the 1987 survey of the Young Women's Cohort of the National Longitudinal Surveys of Labor Market Experience (NLS). Respondents in this cohort were aged 33 to 43 in 1987. In 1987, 3,639 of the

5,159 individuals in the original sample were interviewed (a retention rate of 70.5%). To facilitate comparisons with previous studies, the sample was restricted to respondents who were married and whose spouse was present and employed. These restrictions resulted in a sample size of 1,083 of which 786 respondents (73%) were employed.

In the 1987 survey, respondents in the Young Women's Cohort were asked to give the number of hours per week they spent on all household tasks. Two disadvantages of using this measure of household work time are: (1) respondents were asked to recall time for a one week block rather than using the more accurate procedure of keeping a time diary, and (2) the household work time estimate is for the respondent only.

Nevertheless, this data set does contain good measures of the market earnings of each spouse as well as other income received by the household. Further, measures of labor market experience, labor market structure, and hours worked are also available. Such variables have been important predictors of labor force participation and wage rates in past research (for example, Shapiro & Shaw, 1982; Zick & Bryant, 1983).

Empirical Model

The equation for the probability of labor force participation is:

$$\text{LFP} = \text{ED} + \text{WKEXP} + \text{WKEXP2} + \text{AREA} + \text{HUSBWY} + \text{OTHERY} + \text{KIDLT6} + \text{NUMKIDS} + \text{UNEMP} \qquad (4)$$

This equation is estimated on the entire population and provides the self selection correction factor or inverse mills ratio (LAMBDA) which is included as a variable in the following system of equations:

$$\text{LNWRATE} = a_0 + a_1\text{ED} + a_2\text{WKEXP} + a_3\text{WKEXP2} + a_4\text{AREA} + a_5\text{UNEMP} + a_6\text{LAMBDA} \qquad (5)$$

$$\text{HRSMKTWK} = c_0 + c_1\text{ED} + c_2\text{WKEXP} + c_3\text{WKEXP2} + c_4\text{AREA} + c_5\text{UNEMP} + c_6\text{HUSBWY} + c_7\text{OTHERY} + c_8\text{KIDLT6} + c_9\text{NUMKIDS} + c_{10}\text{LAMBDA} \qquad (6)$$

Equations (5) and (6) are estimated on wage earners only. Definitions and descriptive statistics for all variables in the empirical equations are presented in Table 1.

Since the market wage rate equals the reservation wage for employed women, equations (5) and (6) can be equated and solved for the reservation wage:

$$\text{LNWSTAR} = b_0 + b_1\text{ED} + b_2\text{WKEXP} + b_3\text{WKEXP2} + b_4\text{AREA} + b_5\text{HUSBWY} + b_6\text{OTHERY} + b_7\text{KIDLT6} + b_8\text{NUMKIDS} + b_9\text{HRSMKTWK} \qquad (7)$$

and the parameters of (7) can be retrieved from the two estimable equations (5 and 6).[2] Note that equation (5) is the empirical counterpart of equation (1) and equation (6) is the empirical counterpart of equation (3).

The variables included in the empirical specification of the wage equation (5) were chosen to be as similar as possible to those chosen by Zick and Bryant (1983) and are in accord with human capital theory. Education is hypothesized to increase market productivity. Work experience is hypothesized to increase market productivity at a decreasing rate. In order to try to control for market characteristics that may affect wage rates, variables for urban/rural area of residence and the local unemployment rate are included in the equation.

Likewise, the variables hypothesized to affect household productivity are in accord with human capital theory and were chosen to be similar to those used by Zick and Bryant (1983). Again, education and work experience are expected to increase household productivity. Increasing income from husbands' wages and salary and from other sources is expected to increase the value of wives' nonmarket time. Both the presence of young children and an increase in the number of children present in the household are hypothesized to increase the value of wives' household work time because caring for children is considered a valuable use of time and because child care can be combined with other home production activities.

Equation (4) is estimated using the probit option in Shazam. OLS regression is used to estimate equations (5) and (6). The estimated parameters for equations (4), (5), and (6), and the calculated parameters for equation (7) are presented the Appendix and will not be formally discussed.

Results and Discussion

Since family size and composition have been consistently shown to affect the time spent by women in household work, estimates of the value of time in such work are often stratified by family characteristics (Gauger, 1973; Gauger & Walker, 1980; Walker, 1980). To facilitate comparisons with Zick and Bryant's (1983) work, estimates are provided for employed and nonemployed wives by the age of the youngest child in the household.

For employed wives, the estimates of the value an hour spent in household production calculated from the NLS data are of the same magnitude as those obtained from the NE-113 Time Use data (Zick & Bryant, 1983) but are generally lower in value (Table 2). Although it is possible that wages did not keep up with inflation over the 1977 to 1987 period, it is more likely that the apparent differences in the estimates are due to differences in the data sets. The NE-113 data is a time use data set and, not surprisingly, contains better measures of time use than does the NLS data. It is also a more homogeneous data set in terms of household composition as all households in the data set are two-parent, two-child families whereas the NLS data contains a diverse array of households. Further, the reservation wage estimates from the NE-113 data were calculated for New York residents only (Zick & Bryant, 1983).

The value of an hour in household work is consistently higher for the employed than the nonemployed NE-113 wives (Table 2). However, the opposite is true for the NLS wives. Nonemployed NLS wives had much higher reservation wage estimates than employed NLS wives, indicating that the NLS wives are much more productive in the home. Although outliers can have inordinate effects when cell sizes are small, the smallest cell size among the nonemployed NLS wives was 28 and there was little change in the reservation wage estimate from cell to cell.

Table 1
Definitions and Descriptive Statistics of Variables Used in the Model.[a]

Variable	Definition	Means[b] (Standard deviation)
Dependent variables		
LFP	1 = wife works in the labor force 0 = wife is a full-time homemaker	.73 (.45)
LNWRATE[c]	Natural log of wage rate	.00 (.62)
LNWSTAR	Natural log of reservation wage	
Independent variables		
ED	Wife's years of education	13.17 (2.35)
WKEXP	Wife's years of labor force experience	5.36 (5.70)
WKEXP2	Wife's years of labor force experience squared	61.22
KIDLT6	1 = child under 6 years of age present in household 0 = no child under 6 years of age present	.27 (.44)
NUMKIDS	Number of children under 18 present in household	1.74 (1.15)
HUSBWY	Income of husband from wages and salary	30,955.00 (16,533.00)
UNEMP	Unemployment rate for local labor market (x.x%)	6.440 (2.72)
AREA	1 = urban 0 = rural	.82 (.38)
OTHERY	Income of household from other sources	1,102.20 (3,963.00)
HRSMKTWK[c]	Weekly hours worked in market by wife during survey week	6.64 (18.99)
LAMBDA	Sample selection correction factor	

[a]N = 1083. [b]Means reported for noncontinuous variables represent the proportion of the sample with a value of 1. [c]For employed wives only.

Table 2

Reservation Wage Estimates of the Average Dollar Value of an Hour of Wife's Time in Household Work, by Age of Youngest Child and Employment Status of the Wife.

Age of youngest child	NE-113 data[a]		NLS data	
	Employed	Not employed	Employed	Not employed
12-17	8.79	7.72	7.01 (n=210)	26.12 (n=70)
6-11	8.17	8.05	6.96 (n=254)	28.43 (n=92)
2-5	8.04	7.27	7.29 (n=134)	28.38 (n=76)
< 2	-	-	8.05 (n=54)	28.72 (n=28)
1	8.66	7.38	-	-
< 1	7.43	6.84	-	-
None	-	-	8.86 (n=134)	29.20 (n=31)
Overall	8.34	7.40	7.40 (n=786)	27.96 (n=297)

[a] From Zick & Bryant (1983). These numbers have been inflated by the change in the Consumer Price Index (Bureau of the Census, 1990, Table No. 762) between 1977 (when the NE-113 data were collected) and 1987.

Another notable difference in the estimates obtained from the two data sets is the relationship between the size of the wage rate and the age of the youngest child. NLS estimates of the wage rate tend to decrease as the age of the youngest child increases while the opposite is true of the NE-113 estimates (Table 2). Zick and Bryant (1983) concluded that the increase in the value of household work time with age of youngest child indicated that young children did not increase the value of home production by increasing the wife's productivity so much as they increased the wife's work load. Thus, the NLS estimates seem to lend support to the opposite side of the argument, that is, that young children raise the value of nonmarket time.

In order to compare the reservation wage estimates with valuations obtained from a market cost method, the average yearly dollar value of household work was calculated for each household type using the reservation wage estimates and the housekeeper cost method. The average hourly wage of a housekeeper in the United States in 1987 was $3.25, a wage rate lower than all the reservation wage estimates calculated in Table 2 (Bureau of the Census, 1990, Table No. 762). Consequently, the yearly value of household production for the various household types is higher when estimated using the reservation wage as opposed to the housekeeper cost approach (Table 3).

Using the housekeeper cost method, the average value of household production for the NLS households in 1987 is estimated at $4,588.40; using the reservation wage estimates, the estimated value is $15,040.80, over three times the housekeeper cost value. Again it is useful to examine the yearly values by household type. Of course, the pattern of the value of household production decreasing as age of the youngest child increases continues to hold. This relationship also holds for the housekeeper cost estimates because the same average hours spent in household work are used in both sets of calculations.

Clearly the value of work in the home when estimated using reservation wage numbers is much greater than the housekeeper cost estimates of the value for nonemployed women (Table 3). In addition, the reservation wage estimates are 37 to 47% larger than the values obtained from the housekeeper cost method for the employed women. Hence, not only is the value of time spent in household work greater in NLS households with a nonemployed wife because more hours are spent by the wife in household work, but the value of that work to the household is much greater than that which would be implied using the housekeeper cost method of valuation.

Comparing the estimated value of household production with the total family income of these NLS households is instructive. In Table 4, the value of time in household work ranges from 14 to 28% of total family income for households where the wife is employed. For households where the wife is not employed, the value of time in household work ranges from 126 to 240% of family income. Hence, for the NLS households in which the wife is not employed, the welfare of the household is increased dramatically by the household work of the wife. Regardless of the employment status of the wife, the value of household work as a percentage of total income is largest for households with young children.

Table 3

Comparison of Yearly Dollar Values of the Wife's Time in Household Work Estimated by the Housekeeper Cost and the Reservation Wage Methods, by Age of the Youngest Child and Employment Status of the Wife.[a]

Age of youngest child	Housekeeper Cost[b]		Reservation Wage	
	Employed	Not employed	Employed	Not employed
12-17	3,400.90	5,931.20	7,334.60	47,668.90
6-11	3,956.90	5,846.50	8,478.20	51,140.40
2-5	4,460.30	7,757.20	10,004.80	67,746.60
< 2	5,154.90	12,060.00	12,782.20	106,582.60
None	2,486.00	5,179.00	6,779.20	46,533.10
Overall	3,725.70	6,871.50	8,481.50	59,117.30

[a] All calculations are based on 50 weeks worked per year. [b] The average hourly wage of private household worker in 1987 was $3.25 (Bureau of the Census, 1990, Table No. 671). This wage was multiplied by the average number of hours the wife spent in household work for each household type.

Conclusions and Directions for Further Research

The large differences in the value of household work obtained using the housekeeper cost and reservation wage estimates support similar findings by Zick and Bryant (1983) and have implications for applied work in family resource management. Market cost methods of valuation may be regarded as providing an estimate of the minimum cost of purchasing household services in the market or the minimum contribution of a homemaker to a marriage. These are conservative estimates when compared with the reservation wage estimates, that is, the values these households place on household work. Although market cost methods will, no doubt, continue to be used in legal settings because they are conservative, as has been previously noted by Murphy (1982), it is the reservation wage estimates which are appropriate for making welfare comparisons among households.

The difference found between employed and nonemployed wife NLS households indicates that while household production is important to all these households, it is of even greater value to the households with full-time homemakers. Further, differences noted in the value of household work by age of youngest child indicates that age of children should continue to be considered in studies of the value of household production. Overall, the women in the sample averaged 28 hours per week in household work (22 hours/week for employed wives and 42 hours/week for nonemployed wives) which is consistent with previous research indicating that women do most of the nonmarket work of households (Gauger 1973; Gauger & Walker, 1980).

Lack of detailed information as to how much time was allocated to each household activity precluded calculation of the value of time in household work using the specialist cost method for the NLS data. However, future work which estimates the value of household work time using the housekeeper cost, specialist cost, "old" opportunity cost, and reservation wage procedures would be useful in establishing differences in the magnitude of the estimates among the procedures. As well, the reservation wage estimates exhibited marked sensitivity to the specification of the model, an outcome in agreement with recent work on the stability of such estimates (Paarsch, 1984; Stolzenberg & Relles, 1990) brought to the attention of the author by a reviewer. Further work on the reservation wage estimates themselves appears to be in order.

Despite the limitations of the NLS data set, it does present an opportunity to study the value of household work to the sampled households over time. Although the present study does use the most recently available year of data from the NLS young women's cohort, the longitudinal nature of the data set should be exploited. Estimates of the value of household production over the years for these NLS households may lend insight into how the welfare of households changes with changes in the life cycle.

Table 4

The Value of Time in Household Work as a Percentage of Total Family Income[a]

Age of youngest child employed	Value of household time[b]		Total family income		Value of household work time as a percent of total income	
	Employed	Not employed	Employed	Not employed	Employed	Not
12-17	7,334.60	47,668.90	44,526.00	37,840.00	16.47	125.97
6-11	8,478.20	51,140.40	45,408.00	36,624.00	18.67	139.64
2-5	10,004.80	67,746.60	45,282.00	40,909.00	22.09	165.60
< 2	12,782.20	106,582.60	45,985.00	44,310.00	27.80	240.54
None	6,779.20	46,533.10	49,934.00	29,314.00	13.58	158.74
Overall	8,481.50	59,117.30	45,962.00	37,969.00	18.45	155.70

[a] Total family income includes income from wages and salaries of all household members and transfer income such as public assistance.
[b] Using the reservation wage estimates.

Appendix

Table A

Parameter Estimates for the Probability of Labor Force Participation

Independent variables	Coefficient (Standard error)
ED	0.069* (0.023)
WKEXP	0.385* (0.029)
WKEXP2	-0.015* (0.002)
AREA	0.149 (0.133)
HUSBWY	-1.6E-5* (3.2E-6)
OTHERY	-3.2E-5* (1.1E-5)
KIDLT6	-0.211* (0.121)
NUMKIDS	-0.120* (0.046)
UNEMP	-0.004 (0.018)
INTERCEPT	-0.443 (0.335)
McFadden's $R^2 = .33$	

*p < .05.

Table B

Parameter Estimates Wife's Market Wage and Hours of Market Work, and the Calculated Coefficients for the Reservation Wage Equations (Standard Errors in Parentheses).

	Dependent variables		
Independent variables	LNWRATE (std err.)	HRSMKTWK (std. err.)	LNWSTAR (std. err.)
ED	0.068* (0.009)	0.419 (0.215)	0.085
WKEXP	0.032 (0.021)	0.363 (0.629)	0.047
WKEXP2	-1.8E-4 (9.2E-4)	-0.012 (0.026)	-6.7E-4
AREA	0.178* (0.051)	-0.257 (1.099)	0.167
UNEMP	-0.003 (0.007)	0.077 (0.153)	--
HUSBWY	--	-9.1E-5* (4.0E-5)	-3.7E-6
OTHERY	--	-4.3E-5 (1.4E-4)	-1.7E-6
KIDLT6	--	0.491 (1.067)	0.020
NUMKIDS	--	-1.377* (0.413)	-0.056
HRSMKTWK	--	--	-0.040
LAMBDA	-0.424* (0.137)	-2.754 (4.509)	
INTERCEPT	0.884* (0.184)	34.692* (4.850)	2.289
Adj R^2	.28	.06	
	$F_{(6,778)} = 51.58$	$F_{(10,774)} = 5.78$	

*p < .05.

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Endnotes

1. The notation follows that of Zick and Bryant (1983,1990).

2. The coefficients (a_5 and c_5) on unemployment in equations (5) and (7) are used to identify b_9 and thus the coefficients for equation (6) are calculated as follows:

$$\begin{aligned}
b_0 &= a_0 - c_0{}^{*}b_9\\
b_1 &= a_1 - c_1{}^{*}b_9\\
b_2 &= a_2 - c_2{}^{*}b_9\\
b_3 &= a_3 - c_3{}^{*}b_9\\
b_4 &= a_4 - c_4{}^{*}b_9\\
b_5 &= - c_6{}^{*}b_9\\
b_6 &= - c_7{}^{*}b_9\\
b_7 &= - c_8{}^{*}b_9\\
b_8 &= - c_9{}^{*}b_9\\
b_9 &= a_5/c_5
\end{aligned}$$

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Demand for Small Cars in the United States

Rachel Dardis, University of Maryland[1]
Horacio Soberon-Ferrer, University of Maryland[2]

The purpose of this paper was to investigate the impact of household characteristics and preferences for Japanese cars on the demand for small cars in the United States. Two stage probit analysis was used to examine the impact of various explanatory variables on the purchase decision. The results indicated that preferences for Japanese cars, income, price and several household characteristics had a significant impact on the probability of purchasing a small car. The results of this study provide support for freer trade in automobiles and higher gasoline taxes as energy conservation strategies.

Introduction

The needs for energy conservation in the United States in recent years has increased due to environmental and oil dependency concerns. Fossil fuel burning causes environmental pollution, ozone depletion and may play a major role in global warming while oil imports account for a significant portion of the U.S. trade deficit. Individual consumers could alleviate some of these problems by changing their consumption patterns including their use of automobiles. This occurred after the energy crisis of 1973 when the demand for small cars increased due to increases in the price of gasoline and decreases in real income. Congress also introduced corporate average fuel economy standards (CAFE) in 1975 which became effective in 1978.

The situation changed in the 1980s due to declines in gasoline prices and the belief that the energy crisis had passed. In 1985 Robert Crandall stated that "the societal case for increasing energy conservation" appeared rather weak (Crandall et al. 1986, p. 139). The CAFE was reduced while the market share of mid-sized and large cars increased. Few changes occurred in the 1986 to 1990 period in spite of continued interest in energy conservation, a cleaner environment and lower oil imports. According to Samuelson (1991), Americans are in favor of these goals but were unwilling to make any sacrifices for them while the politicians continue to ignore the problem.

The purpose of this study was to investigate the demand for small cars in the United States in 1986 and the awareness/responsiveness of different households to the need for energy conservation. The year 1986 is the most recent year for which data on durable goods are available. Consideration was given to the preference for Japanese as opposed to U.S. automobiles in the analysis since the demand for small cars may reflect the demand for Japanese cars. The results of this study should be of use to analysts of consumer behavior as well as to energy industry analysts who are concerned with the need for energy conservation and the development of appropriate energy conservation strategies.

Sample and Variables Selected

The sample was new car purchasing households in 1986. The analysis was confined to U.S. and Japanese cars since only twelve households purchased European and other foreign cars. The origin of the car was based on company ownership and management due to the globalization of production facilities in recent decades. Thus, cars which were produced by Japanese companies such as Honda were classified as Japanese cars irrespective of whether they were produced in Japan or the United States

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[1] Professor
[2] Assistant Professor

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(Japanese transplants). A similar procedure was used for cars produced by American-owned companies such as GM and Ford.

Two size classes were used -small and large- based on major differences in fuel efficiency between the two classes. Small cars were subcompact, compact and sporty cars while large cars were medium and large cars. These two classes were drawn from the five size classes given in Consumer Reports.

The data were obtained from the 1986 BLS Consumer Expenditures Survey. This is the most recent source of data on durable goods purchases. The analysis was confined to single car purchasing households, who accounted for approximately 16 percent of all households in 1986. Selection of the independent variables was based on previous research. Each of the major independent variable is discussed below.

Income

The log of annual income after taxes was used as the income measure in this study and it was hypothesized that an increase in income would decrease the probability of purchasing a small car.

Purchase Price

It was hypothesized that consumers would prefer smaller cars due to lower prices (as well as lower operating costs). Thus, this variable should have a negative impact on the probability of purchasing a small car.

Household Characteristics

These characteristics were based on previous research and were age, education, marital status, race, and sex of household head as well as family size. It was hypothesized that older households would be more likely to purchase large cars. This would reflect past consumption patterns of older individuals who were used to large American cars. It was also hypothesized that education would have a positive impact on purchase probabilities for small cars based on a greater awareness of the need for energy conservation by more educated individuals.

The effects of marital status, race and sex were not predicted due to inconclusive results in the literature. Two variables were used for family size - the number of children (individuals aged less than sixteen) and the number of adults (individuals aged sixteen and over). It was hypothesized that the number of adults would increase the probability of purchasing a small car based on previous studies. A possible interaction between race and purchase price was also investigated since the impact of race may vary according to purchase price.

Location

Location was used as a proxy variable for energy prices as well as for differences in tastes and preferences due to regional factors.

Net Stock

This was equal to the number of cars owned after purchase minus one. Based on previous research it was hypothesized that net stock would have a positive impact on the probability of purchasing a small car.

Probability of Purchasing a Japanese Car

It is possible that consumers may buy small cars because they are Japanese rather than because they are small. For this reason, the probability of buying a Japanese car was introduced as an explanatory variable in the small-car buying decision. This variable was endogenous, necessitating the use of two stage probit which is discussed in the following section.

Two Stage Probit

The two stage probit model used in this analysis was based on Maddala (1983, pp. 242-247). It is the equivalent of two stage least squares. The model is as follows:

$$y^*_1 = \alpha_1 y^*_2 + \beta'_1 X_1 + U_1 \qquad (1)$$

$$\begin{gathered} y^*_2 = \alpha y^*_1 + \beta'_2 X_2 + u_2 \\ \textit{where } y_1 = 1 \textit{ if } y^*_1 > 0,\ y_1 = 0 \textit{ otherwise} \\ y_2 = 1 \textit{ if } y^*_2 > 0,\ y_2 = \textit{otherwise} \end{gathered} \qquad (2)$$

The first equation is used to calculate the probability of purchasing a Japanese car while the second equation is used to calculate the probability of purchasing a small car.

In the first stage we estimate the following equation

$$y^*_1 = \prod\nolimits_1 X + v_1 \qquad (3)$$

where X includes all the exogenous variables in the system. In the second stage, we estimate y^*_2 using predicted values for y^*_1 in equation (6). Both equations are estimated using maximum likelihood probit analysis.

The set of X variables in equation (3) included all variables previously discussed under the demand for small cars as well as a new variable, origin of disposed-of-stock. It was hypothesized that households that disposed of Japanese (American) cars would be more likely to buy Japanese (American) cars.

The results of the probit analysis were used to estimate the probability of purchasing a Japanese car for each individual in the sample. This was the predicted value of y^*_1 which was then used as a variable in estimating the probability of purchasing a small car. In addition, the effects of various independent variables on purchase probabilities for small cars were investigated as follows. A purchase probability for a representative household was first obtained based on average values or modal values in the case of categorical variables. These variables were then changed in order to estimate the impact of such variations on purchase probabilities.

Results

A total of 267 household purchased new cars in 1986. Purchases included 141 small American cars, 84 small Japanese cars and 142 large American cars. No large Japanese cars were purchased. There was no difference between the two groups of households with respect to income while there were differences with respect to purchase price and some household characteristics. Higher purchase prices were paid for large cars. The heads of large car purchasing households were more likely to be older, male, married, and less educated than the heads of small car purchasing households. There were few differences with respect to employment status of spouse, race, and location.

The results of the probit analysis for Japanese cars are given in Table 1. The likelihood ratio statistic, which is given at the bottom of the table, indicates that the model is significant in explaining the probability of purchasing a Japanese car. It should be emphasized that the sole purpose of this analysis was to estimate the probability of purchasing a Japanese car which was used as one of the variables in the second stage of the analysis.

The results of the probit analysis for small cars are given in Table 2. Again, the likelihood ratio statistic indicates that the model is significant. The likelihood ratio index, which serves as a goodness of fit measure, is satisfactory and close to the upper bound. In the case of categorical variables such as sex and region the omitted category is enclosed in parenthesis. The

TABLE 1

Estimated Coefficients from Stage 1 Probit Analysis: Probability of Buying a Japanese Car[a]

Variable	Coefficient	t-ratio
Constant	-1.740	-6.452**
Disposable income	0.030	2.507*
Purchase price	0.038	4.011**
Age (30-54)		
Under 30	0.328	3.103*
Over 54	-0.545	-4.884**
No. of children	0.008	0.187
No. of adults	0.140	3.664**
Female (male)	0.026	0.240
Not married (married)	0.592	4.757**
Working spouse (no spouse, or does not work)	0.143	1.607
Black (non-Black)	0.557	1.652
Purchase price * Black	-0.069	-3.044**
Education (not a high school graduate)		
High school graduate	-0.200	-1.649
Beyond high school	0.252	2.066*
Occupation (not working or retired)		
Professional, clerical	0.294	2.328*
Blue collar	0.189	1.312
Location (urban West)		
Urban Northeast	-0.319	-2.548*
Urban Midwest	-0.373	-3.026**
Urban South	-0.508	-4.251**
Rural	-0.528	-3.465**
Origin of disposed-of-stock (did not dispose or unknown)		
Japanese	0.978	5.781**
U.S.	-0.754	-8.533**
Net stock	-0.246	-6.158**
Likelihood Ratio Statistic	298.30**	
Likelihood Ratio Index	0.29	

[a] Reference groups for dummy variables are given in parentheses.

*Significant at 0.05 level.

**Significant at 0.01 level.

TABLE 2

Estimated Coefficients from Stage 2 Probit Analysis: Probability of Buying a Small Car[a]

Variable	Coefficient	t-ratio
Constant	0.313	1.109
Prob (Japanese)	1.906	5.986**
Disposable income	0.053	4.170**
Purchase price	-0.156	-15.257**
Age (30-54)		
Under 30	0.529	4.596**
Over 54	-0.194	-1.579
No. of children	0.144	3.352**
No. of adults	0.311	7.645**
Female (male)	0.564	4.953**
Not married (married)	-0.419	-3.021**
Working spouse (no spouse, or does not work)	-0.399	-3.630**
Black (non-Black)	-0.969	-2.753**
Purchase price * Black	0.088	3.684**
Education (not a high school graduate)		
High school graduate	0.516	0.408
Beyond high school	0.246	-0.189
Occupation (not working or retired)		
Professional, clerical	0.563	4.248**
Blue collar	0.948	6.380**
Location (urban West)		
Urban Northeast	-0.087	-0.646
Urban Midwest	-0.016	-0.119
Urban South	-0.094	-0.710
Rural	-0.054	-0.333
Net stock	-0.142	-3.226**
Likelihood Ratio Statistic	415.55**	
Likelihood Ratio Index	0.35	

[a] Reference groups for dummy variables are given in parentheses.

*Significant at 0.05 level.

**Significant at 0.01 level.

values for the remaining categories are relative to the omitted category. A positive coefficient for households in this category indicates that they are more likely to purchase small cars than households in the omitted category.

The endogenous variable, the probability of purchasing a Japanese car, has a positive and significant impact on small car purchases indicating the importance of controlling for this variable in an analysis of small car purchase decisions. The effect of income is also positive and significant which is somewhat surprising and contrary to the results of previous studies. However, the income effect was relatively minor as will be shown later when the impact of changes in income was investigated.

In contrast to this finding, the coefficient for purchase price is negative and significant indicating that consumers are responsive to price differentials in marketplace in selecting car size. Younger households, and female headed households are more likely to buy small cars than other households. The number of adults also has a positive and significant impact on purchase probabilities which is in agreement with the results of other studies. The positive effect obtained for the number of children may reflect the diverse transportation needs of families with several children.

The results for race vary according to the purchase price since the coefficient for the interaction term is positive. The probability of buying a small car when the race of the household head changes from non-black to black is equal to -0.969 + 0.088*Price. This is equal to zero when the price of a small car is equal to $11,011 since price is given in thousands of dollars. Thus, blacks have a higher demand for small cars than non-blacks when prices are above this value.

Education is insignificant which may be due to the fact that consumers at all levels were aware of the energy conservation issue by 1986. In contrast, occupation is significant. Households in the two working categories are more likely to buy a small car than non-working or retired individuals. This result may reflect the different transportation needs of workers and non-workers as well as the effects of retirement.

Location is insignificant. This probably reflects the considerable diversity that existed within each region with respect to both gasoline prices and consumer preferences. The final variable, net stock, has a negative impact on the probability of purchasing a small car.

The results of the probit analysis were used to estimate the purchase probability for different types of households. A representative household was first selected using average values for continuous variables or the category with the greatest number of respondents for categorical variables. The representative household was headed by a non-black married male with a non-working wife and education beyond high school. His occupation was professional, clerical or self-employed. The household was located in an urban area in the South and either did not dispose of stock or its origin was unknown.

Predicted probabilities are given in Table 3. The probability of purchasing a small car is 67 percent for the representative household and it includes the impact of individual household and automobile characteristics on purchase decisions as well as the probability of purchasing a Japanese car. Increases in purchase probabilities occurred when the following changes were made: income increased by $10,000, age decreased to under 30 years, the number of adults or children increased by one, head of household changed to female, household located in the urban West, and the household disposed of Japanese stock. In contrast, households that paid a higher price, that disposed of American stock, had a working spouse, had lower levels of education or were older, and whose net stock increased by one were less likely to buy a small car than the representative household.

The success of the probit model in predicting purchase probabilities was also

TABLE 3
Sample Probability Calculations

Household Type	Probability of Purchasing a Small Car
Representative Household	0.67
Changes to representative household	
Disposable income (+$10,000)	0.68
Price (+$1,000)	0.63
Under 30	0.88
Over 54	0.58[a]
Number of children (+1)	0.72
Number of adults (+1)	0.80
Female	0.84
Not married	0.57
Working spouse	0.54
Not a high school graduate	0.60[a]
High school graduate	0.64[a]
Blue collar	0.80
Not working/retired	0.40
Urban Northeast	0.75[a]
Urban West	0.81[a]
Disposed of Japanese stock	0.87[a]
Disposed of U.S. stock	0.56[a]
Net stock (+1)	0.57

[a] Only reflects change in probability of purchasing a Japanese car.

TABLE 4
Comparison of Actual and Predicted Probabilities

	Actual	Predicted	
		Small	Large
Small	225 (61%)	200	25
Large	142 (39%)	50	92
Total	367	250	117

Proportion predicted correctly 0.79.

Proportion predicted by chance $C_{PRO} = (0.61)^2 + (0.39)^2 = 0.52$.

ascertained by comparing actual and predicted probabilities and the results are given in Table 4. There were a total of 367 new car purchasing households in 1986 of whom 225 purchased small cars and 142 purchased large cars. According to the model the proportion predicted correctly was 79 percent. The difference between this proportion and the proportion predicted by chance (52 percent) was significant at the five percent level (Freund and Williams 1977).

Discussion

The results of this study are of interest in several respects. One of the most important finding is the role played by Japanese cars in stimulating a demand for small cars. Consumer preferences for Japanese cars meant that they were also more likely to buy small cars. This has implications for any conservation policy since it indicates that successful conservation strategies may be those that rely on consumer self-interest. In this context, it is interesting to note that voluntary quotas which continue to restrict the supply of small Japanese cars are in opposition to the energy conservation needs of the United States as well as to the needs of consumers.

Major energy conservation strategies include changing the CAFE, and imposing an energy tax. Several bills have been proposed in Congress for increasing the current CAFE requirement for domestically produced automobiles from 27.5 miles per gallon to forty miles per gallon. However, such a proposal is likely to provoke opposition from Detroit as well as from industry analysts who believe that it may be too restrictive, too costly and postpone new car buying decisions (Rowen 1991, Samuelson 1991). It was also pointed out by Crandall (1986) and Henderson (1985) that the CAFE makes it more difficult for American manufacturers to produce their smaller cars in Japan or Korea where production costs are lower. A more stringent CAFE might also encourage continuation of voluntary export restraints for Japanese cars. It would be more efficient to eliminate the CAFE standards as well as trade restraints.

For these reasons most analysts are in favor of energy taxes including higher gasoline taxes. Higher gasoline taxes would encourage the consumption of more fuel efficient cars as well as discourage unnecessary driving (Crandall 1986, Rowan 1991, Samuelson 1991). Taxes would also maintain consumer choice since individuals could purchase large cars provided that they were willing to incur higher costs.

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The Impact of Legal Professionals on Alimony Award Decisions

Walter L. Ellis, University of New Hampshire[1]

The purpose of this study was to determine whether background characteristics of legal professionals have an impact on alimony award decisions. The attorneys' value systems and the judges' disposition play a role in the awarding of alimony. Attorneys possessing liberal beliefs decreased the probability of alimony being awarded. Judges with high temperament scores increased the probability of alimony being awarded. Neither attorneys nor judges were found to have an impact on award amounts.

Introduction

A divorce takes place within the confines of a legal environment. Therefore, legal professionals have a great deal of influence over families in the divorce settlement process. Spanier and Anderson (1979) suggest that once individuals decide to divorce or establish a support agreement, one of their first contacts within the legal environment is an attorney to represent their interests. In fact, alimony awards are arrived at through negotiations between the spouses and their attorneys with the judge acting as a final arbitrator (Oster, 1987). The purpose of this paper is to determine whether background characteristics of legal professionals, i.e., judges/attorneys, have an impact on alimony award decisions in Franklin County, Ohio.

Attorneys bring into the negotiation process different specializations, experiences and value systems, i.e., liberalism and conservatism, which could affect alimony award decisions. Information regarding the impact of these factors on alimony award decisions could enable consumers of legal professionals, i.e., attorneys, to make wise and intelligent representation choices.

During the negotiation process attorneys may adopt negotiation strategies involving the use of threats and misrepresentation of facts in the hope of reaching a more favorable settlement for their clients (Spanier and Anderson, 1979). As pointed out by Spanier and Anderson (1979):

> The attorney's role is that of an advocate for his or her clients, and under an adversary divorce statute, the best interests of the client perhaps may be served by advice which is not wholly consistent with the procedures which the law specifies (p. 612).

Despite the fact that there are laws which govern how divorce cases should proceed (Mnookin and Kornhauser, 1979), judges use their own discretion in carrying out these laws. Spanier and Anderson (1979) found that judges bend the law when necessary to expedite a divorce decree which would benefit all parties involved.
Further, judges have different levels of temperament and integrity. Do these attributes have an influence on judges' decision-making processes? Information regarding the impact of these attributes on alimony award decisions could be beneficial to both consumers of legal professionals and to the legal professionals themselves. Because interaction with the legal environment may be the first of many new experiences for divorcing couples (Spanier and Anderson, 1979), information about personal attributes of the judge could provide insight as to

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[1] Assistant Professor
Family Studies

how divorcing couples should behave within the legal environment. Moreover, this information may enable attorneys to provide the best possible representation for their clients.

Review of Literature

Although alimony is intended to be an allowance for the support of the spouse and maintenance of the wife after marital disruption, relatively few women are awarded such an allowance. An Ohio study (McGraw, Sterin and Davis, 1981-82) revealed that in 1978 only 16 percent of women in Coyahoga county were awarded alimony. Similarly, Census data in 1987 found that for a national sample of eligible women only 16.8 percent were awarded alimony (Bureau of the Census, 1990).

Empirical studies of alimony have modelled it as a negotiation process involving the husband's ability-to-pay, the wife's need, the spouses' investment in the marriage, and legal processes (decisions), i.e., decisions made during the divorce. The husband's income (ability-to-pay) has been found to be positively associated with alimony awards (Oster, 1987), whereas the wife's income (need) is negatively associated (Landes, 1978).

Children acquired during the marriage and length of the marriage have both been used as proxies for investment in the marriage. The presence of children has been found to be positively associated with alimony awards (Oster, 1987). Length of marriage is also positively associated with alimony awards (Burgess, Jackson, and Stafford, 1990; Landes, 1978).

Several legal processes (decisions) have been found to be important alimony variables. The husband at fault has been found to be positively associated with alimony awards (Oster, 1987). The wife as plaintiff, and neglect as grounds, have both been found to be negatively associated with alimony awards (Burgess et al., 1990). Burgess, Jackson, and Stafford (1990) found the number of motions filed by either the wife or husband to be positively associated with alimony awards. Information regarding the husband's contesting the divorce is not clear. While Oster (1987) found a negative association between alimony awards and the husband's contesting the divorce, Burgess et al. (1990) found a positive association. The influence of legal professionals, i.e., judges/attorneys, has not been well established (Burgess et al., 1990).

The following model will be estimated to determine: 1) the probability of award/receipt of alimony, and 2) the amount of alimony awarded:

$$\text{Alimony} = f\,(A/N, I, P, L) \quad (1.1)$$

Where:
A/N = Ability-to-pay/Need
I = Investment in the marriage
P = Legal processes (decisions)
L = Legal professionals

While alimony is a function of (A/N), (I), (P) and (L), the focus of this study is on a subset (L), legal professionals, i.e., background characteristics of judges/attorneys. The remainder of the function will be introduced and used as controls in the empirical alimony award and amount models.

Data and Procedures

Data for this study come from three sources. Four-hundred-ninety-seven October 1987-March 1988 divorce and dissolution cases in Franklin County, Ohio Court of Domestic Relations were randomly selected. Randomization was accomplished through the use of a random digit table. Within the random sample of cases, this study was limited to the two-hundred-ninety-four divorce cases. Dissolution cases, which are simply agreed-upon signed stipulations without the involvement of a judge, were excluded from the study since there is a greater opportunity for judges to have an impact on alimony award decisions in divorce cases.

Court cases contained information on name(s) and age(s) of children, age(s) of parents, income and employment status of parents, name (s) of attorney(s), name of presiding judge, date of marriage, date of filing and decree, and all documents filed in the case such as motions, the separation agreement and decree. The decree specifies income (child support and alimony) and asset (disposition of residence and cash settlement) awards to both parties.

Questionnaires were mailed to a random sample of three-hundred-fifty Central Ohio attorneys drawn from cases in Franklin County Court of Domestic Relations during 1987-88. Of the one-hundred-forty-seven questionnaires returned, one-hundred-thirty were in usable form.

Questionnaires provided information on: 1) attorneys' ratings of Franklin County, Ohio domestic relations judges with respect to judges' performance--temperament, integrity, legal ability, court management skills, 2) attorneys' perception of the judge's intervention in their cases, 3) attorneys' legal practice, and 4) attorneys' background. For a discussion of the measurement of judicial performance see appendix.

Interviews were conducted with judges in Franklin County, Ohio Court of Domestic Relations. Interviews provided information on the judges' background.

Treatment of the Data

The attorney sample was merged via case identification with the court case sample. Seventy-four attorneys were able to be matched with their actual court cases. Because the sample size is relatively small, results from this study should be interpreted with caution. The court case sample was used as the control in the empirical alimony award and amount models.

The data sets used in this study yielded numerous explanatory variables which were thought to affect alimony awards. Partly to avoid the problem of multicollinearity among the explanatory variables and to arrive at the most parsimonious alimony award and amount models, a two step process was used to reduce the number of explanatory variables.

Results

Model-Building: Award/Receipt of Alimony

A variable reduction or model-building technique was performed on background characteristics of legal professionals, demographic characteristics of divorcing couples and legal processes (decisions). At the first step in variable reduction or building the criterion for continued use in the second step was significance at the .2 level or higher in a probit analysis. The criterion for continued use in the final model was significance at the .1 level or higher in a probit analysis run on all variables which passed criterion in the first step.

As reported in Table 1, six background characteristics, (attorney male, attorney liberal, attorney specialize family law, attorney private practice, judge temperament, and judge court management skills) were significant at the .2 level or higher in the initial probit analysis. Once the impact of these six background characteristics was taken into account, attorney age, attorney income, attorney experience, attorney conservative, attorney not specializing, judge intervene in case, judge age, judge experience, judge integrity, and judge legal ability were rejected at the first step. The statistical hypothesis that these variables had no effect on award/receipt of alimony awards could not be rejected at the .2 level or higher.

Table 1

Initial probit analysis of the impact of background characteristics of legal professionals on the award/receipt of alimony, 1987-88

Background	**Coefficients**
Attorney male	-3.67*
Attorney age	-.02
Attorney income	.01
Attorney experience	.03
Attorney conservative	1.07
Attorney liberal	-1.43*
Attorney not specializing	-1.16
Attorney specialize family law	2.73*
Attorney private practice	3.88*
Judge intervene in case	2.69
Judge age	.15
Judge experience	-.12
Judge integrity	-.04
Judge temperament	.07*
Judge legal ability	.01
Judge court management skills	.08*

* = p < .2 level or higher

As indicated in Table 2, attorney liberal, attorney specialize in family law, attorney private practice, and judge temperament remained significant in the reduced set of variables. Attorney male and judge court management skills were rejected for inclusion in the final model. The statistical hypothesis that these variables had no effect on award/receipt of alimony could not be rejected at the .1 level or higher.

Table 2
Intermediate probit analysis of the impact of legal professionals on award/receipt of alimony, 1987-88

Background characteristics	Probit Coefficients
Attorney male	-2.89
Attorney liberal	-1.19*
Attorney specialize family law	1.22*
Attorney private practice	1.56*
Judge temperament	.03*
Judge court management skills	.01

* = p < .1 level or higher

The Empirical Alimony Award Model

To arrive at the final alimony award/receipt model, controls which were introduced in the "Review of Literature" section are reintroduced. A model-building technique similar to background characteristics of legal professionals was performed to arrive at the final controls. The following alimony award/receipt model was estimated:

Alimony award = f (background characteristics of judges/attorneys); A/N, I(P.2)

Where:
A/N = Ability-to-pay/need
Husband employed
Husband's income
Wife's income

I = Investment in the marriage
Length of marriage

P = Legal processes (decisions)
Husband contest divorce
One year separation as grounds
Motions filed by husband

L = Legal professionals
Judge's temperament
Attorney liberal
Attorney specialize family law
Attorney private practice

Alimony Award Model Estimation

Results of equation (1.2) are reported in Table 3. Only background characteristics of legal professionals, i.e., judges/attorneys, with significance at the .1 level or higher are discussed. The judge's temperament was found to have a small positive (.10) impact on award/receipt of alimony. Alimony is not granted by default in divorce cases. Instead, divorcing couples with their respective attorneys must establish a need for alimony with the judge giving final approval. An overwhelming majority (94.6 percent) of attorneys in this study reported that the judge intervened in their cases to help direct an agreement by the divorcing couples. Evidently, judges whom attorneys perceive to be of good temper have positive payoffs during the intervention process.

Self-evaluated liberals were found to have a large negative (-4.89) impact on award/receipt of alimony. Traditionally, alimony has been viewed as husbands, out of a sense of duty, providing financial support to their spouses after divorce. As women have become more economically independent of their husbands and more liberal in their thinking, many women have taken the stance that they should be self-sufficient after divorce. Liberal attorneys may also hold the belief that women should be self-sufficient following divorce, and consequently, not aggressively pursue alimony awards for them.

The husband's income was found to have a small positive (.09) impact on award/receipt of alimony. The husband's income is an indication of his ability to pay alimony. The wife's income had a small negative (-.01) impact on award/receipt of alimony. The wife's income is an indication of her need for alimony. Length of marriage was found to have a relatively small positive (.19) impact on award/receipt of alimony. Length of marriage is a proxy for the spouses' investment in the marriage.

Table 3
Probit Analysis of Factors Affecting Award/Receipt of Alimony, 1987-88

Factors	Probit Coefficients (Standard Errors)
Length of marriage	.19 (2.39)*
Husband employed	-1.89 (-.85)
Husband income	.09 (2.27)*
Wife income	-.01 (-1.86)*
One yr. sep. as ground	-1.45 (-.86)
Husband contest divorce	.12 (.09)
Motions filed by husband	.64 (1.59)
Attorney liberal	-4.89 (-2.23)*
Attorney specialize family law	.20 (.12)
Attorney private practice	1.38 (.93)
Judge temperament	.10 (1.94)*

* = p < .1 level or higher
N = 74
Pearson Chi Square = 8.729

Model-Building: Amount of Alimony

An Ordinary Least Squares (OLS) multiple regression procedure was used to reduce the three sets of explanatory variables, i.e., background characteristics of legal professionals, demographic characteristics of divorcing couples and legal processes (decisions). The variable reduction or model-building procedures are the same as those used in the award/receipt alimony model.

As reported in Table 4, four background characteristics, (attorney specialize in family law, attorney conservative, attorney male, and judge legal ability) were significant at the .2 level or higher in the initial OLS multiple regression analysis. Once the impact of these four background characteristics was taken into account, judge court management skills, attorney private practice, judge experience, attorney experience, judge intervene in case, attorney income, attorney age, attorney liberal, attorney not specializing, judge integrity, judge temperament, and judge age were rejected at the first step. The statistical hypothesis that these variables had no effect on the setting of alimony award amounts could not be rejected at the .2 level or higher.

Table 4
Initial OLS regression of the impact of legal professionals on the setting of alimony award amounts, 1987-88

Background characteristics	OLS coefficients
Judge court management skills	-.05
Attorney specialize family law	.27*
Attorney conservative	.25*
Attorney private practice	.15
Judge experience	-.02
Attorney experience	-.10
Judge intervene in case	.01
Attorney income	.09
Attorney age	.02
Attorney male	-.25*
Attorney liberal	.14
Attorney not specializing	.11
Judge integrity	-.06
Judge temperament	-.08
Judge legal ability	.38*
Judge age	.18

* = p < .2 level or higher

As indicated in Table 5, judge legal ability, attorney male, and attorney specialize in family law remained significant in the reduced set of variables. Attorney conservative was rejected for inclusion in the final model. The statistical hypothesis that this variable had no effect on the setting of alimony award amounts could not be rejected at the .1 level or higher.

Table 5
Intermediate OLS regression of the impact of legal professionals on the setting of alimony award amounts, 1987-88

Background characteristics	OLS coefficients
Judge legal ability	.20*
Attorney male	-.18*
Attorney conservative	.11
Attorney specialize in family law	.15*

* = p < .1 level or higher

The Empirical Alimony Amount Model

To arrive at the final alimony amount model, controls which were introduced in the "Review of Literature" section are reintroduced. A model-building technique similar to background characteristics of legal professionals was performed to arrive at the final controls. The following alimony amount model was estimated:

Alimony amount = f (background characteristics of judges/attorneys); A/N, I(1.3)

Where:
A/N = Ability-to-pay/need
- Husband's income
- Husband's assets
- Wife's income

I = Investment in the marriage
- Number of children
- Preschool age children

L = Legal professionals
- Judge's legal ability
- Attorney male
- Attorney specialize family law

Alimony Amount Model Estimation

Results of equation (1.3) are reported in Table 6. The data show that there were no significant background characteristics of legal professional variables in the alimony amount model. Judge legal ability and attorney specialize family law both were found to have small positive impacts on the setting of alimony award amounts (.07 and .03, respectively). Only the husband's ability to pay and wife's need were found to be important. The husband's income {ability-to-pay} was found to have a large positive (.46) impact on the setting of alimony award amounts, whereas the wife's income {need} had a relatively large negative (-.29) impact.

Table 6
OLS regression of factors affecting the setting of alimony award amounts, 1987-88

Factors	OLS coefficients (Standard Errors)
Husband income	.46 (3.79)*
Number of children	-.19 (-1.57)
Judge legal ability	.07 (.66)
Attorney specialize family law	.03 (.25)
Wife income	-.29 (-2.56)*
Attorney male	-.06 (-.53)
Preschool age children	-.20 (-1.52)

* = p < .1 level or higher
N = 74
$R^2 = .36$
F = 4.27

Conclusion and Implications

The purpose of this study was to determine whether background characteristics of legal professionals, i.e., judges/attorneys, have an impact on alimony award decisions. Judges and attorneys both were found to have an impact on the awarding of alimony. However, neither judges nor attorneys were found to have an impact on the setting of alimony award amounts.

Findings from this study have implications for consumers' welfare in the legal environment. The attorneys' value systems were found to play a role in the awarding of alimony. Self-evaluated liberals were found to have a detrimental impact on alimony awards. Alimony was much more likely to be awarded when spouses had conservative counsel than when they had liberal counsel (19.0 percent v. 2.9 percent). Conservative attorneys may still be holding traditional views toward alimony. The attorneys' value systems are latent in nature. Consequently, it is imperative that consumers probe in depth when evaluating the background of their potential attorneys. It may behoove poor spouses to pursue conservative counsel while wealthier spouses seek liberal counsel.

Alimony is taxable income. The implication for the poorer spouse is that there is a heavier tax liability. Future research may want to ask divorcing spouses whether they make trade-offs between alimony and other awards in divorce settlements because of the tax factor.

The judge's disposition was found to have an impact on alimony award decisions. Consequently, attorneys may want to become more conscious of the negotiation strategies they adopt when representing their clients. Not only could this awareness help improve judicial relationships between attorneys and judges, but it could also help ensure that the attorneys' clients are being more effectively represented.

Appendix

Statistical Measurement of Judicial Performance

Central Ohio attorneys scored (on a scale of 1 [very bad] to 7 [very good]) domestic relations judges in Franklin County, Ohio on four performance attributes--temperament, integrity, court management skills, and legal ability. As shown in Table 1, the attorneys' overall assessment of the judges' performance was slightly good (5.44). The attorneys' assessment of the judges' legal ability received the highest overall mean score (5.67). The assessment of the judges' court management skills received the lowest overall mean score (5.30). The judge's legal ability is an inferred attribute, and is an attribute which often determines judicial decision-making outcomes.

Table A1
Attorneys' Assessment of Judges' Performance

Attribute	Score
Legal ability	5.67
Temperament	5.45
Integrity	5.36
Court management skills	5.30
Overall mean score	5.44

A MANOVA test procedure was used to assess the attorneys' mean scoring of the judges' performance attributes. The MANOVA indicated that each attribute was significant at the .001 level or higher (Table A2). Although individual mean performance scores of the attributes were found to be in range with the overall mean performance score of the attributes, the means were scored differently. Fisher's Least Significant Difference test (FLSD), the smallest difference that would be statistically significant, indicated that there was some similarity among the attorneys in scoring Judges S and R. Judges S and R consistently received higher mean scores on every attribute. Judges S and R differed from Judges T and L. And, Judge T differed from Judge L.

Use of an overall performance score would have captured variability among the judges; however, the judges' performance attributes were found not to be homogeneous (Table A2).

Although the FLSD test showed some similarity among the attorneys in scoring some of the attributes, the differences among scores were greater than the similarities. Consequently, using an aggregate mean score as the statistical measurement of the judges' performance would have masked variability in performance which could affect alimony award decisions.

Table A2
Differences in Mean Scores by Performance Attribute and Judge

Attribute	Judge L	S	T	R	F-test	FLSD
Temprmnt.	27.68	30.36	21.20	29.87	105.65	1.13
Integrity	26.62	29.53	22.64	28.66	58.32	1.12
Managmnt.	26.27	28.32	23.59	27.93	42.62	.92
Ability	27.53	30.39	26.29	29.40	25.86	1.00
F-test	12.24	22.18	54.09	18.51		
FLSD	.54	.57	.80	.54		

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Making Consumer Education "Green:" Issues and Approaches

Brenda J. Cude, University of Illinois[1]

Environmental considerations are increasingly a factor in consumer decision-making. This paper discusses research that describes the various sectors of "green" consumers and the implications for educational programming. It also outlines 10 principles for effective environmental consumer education.

Suddenly, it seems, every choice we make has environmental consequences. Today's "green" consumers are seeking the perfect "green" products. The introduction of "green" products has grown by more than 100 percent since 1985 (*Supermarket News*, 1990). An "eco-mall" was scheduled to open in Summer 1991; the theme was to be, "Please buy only what you need" (Manning, 1991). One firm is planning a line of footwear made from recycled metals, polypropylene, paper bags, coffee filters, and reclaimed scrap tire and foam rubber (Makower, 1991c).

Polls indicate consumers are also "turning green." Since 1987, public concern about the environment has grown faster than concern about any other national problem (Roper Organization, 1990). A sample of food shoppers considered garbage and solid waste disposal a more serious problem in America than nuclear safety, food safety, and national defense (Marketing Research Services, 1990). In a 1990 survey, nearly 90 percent of consumers said they consider the environmental impact of the products they buy and over one-half have decided not to buy a product because they worried about the environmental impact of the product or package (Hager, 1990).

Consumer educators are no doubt looking for ways to incorporate environmental issues in their programs and curriculum. The purpose of this paper is to: 1) identify different types of "green" consumers and the implications for designing education programs, and 2) delineate principles of effective environmental consumer education.

The Green Consumer

Numerous research studies through the years have examined various dimensions of environmentally conscious behaviors. Previous research has identified the ecologically concerned consumer as young, white, female, better-educated, and higher in income, occupational and socio-economic status (Hartman, 1992; see also Ellen, Wiener & Cobb-Walgren, 1991; Schwepker & Cornwall, 1991; and Granzen & Olsen, 1991 for excellent reviews of literature). Personality variables, including internal locus of control, identity with community, and altruism, have also been significantly related to environmentally responsible behaviors (Schwepker & Cornwall, 1991). More environmentally concerned consumers are also more knowledgeable about possible solutions to environmental problems (Granzen & Olsen, 1991).

However, many consumers are still considering possible responses to the call for environmental consciousness. The Roper Organization recently completed a major psychographic study that identified five different types of "green" consumers. Roper surveyed 1,413 Americans and used a clustering technique to divide consumers into five behavioral segments. The segments were based primarily on whether consumers engaged in a list of "environmentally friendly" practices. Profiles of each of the five types of environmental consumers follow (Miller, 1990; Roper, 1990; Schwartz & Miller, 1991).

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[1] Associate Professor and Extension Specialist, Division of Consumer Sciences

True-Blue Greens avoid buying products from companies not environmentally responsible, rely on environmental groups as a major information source, believe individuals can do a lot about air pollution from auto exhaust, and support regulations requiring car pooling. They tend to have above average earnings and education.

Greenback Greens are willing to pay up to 20 percent more for "green" products, believe individuals can do a lot about the greenhouse effect, support regulations requiring new cars to run on alternative fuel, and are too busy to make changes in their lifestyles to help the environment. They have relatively high earnings and educational levels and many have children under the age of 13.

Sprouts support regulations requiring household and personal care products in refillable form, recycle newspapers regularly, are willing to pay five percent more for "green" products, buy products made from or packaged in recycled materials, and believe individuals can do a lot about air pollution from auto exhaust. They are well-educated, have relatively high earnings, and are the group most likely to be married.

Grousers think companies, not individuals, should solve environmental problems, are too busy to make changes, are willing to pay four percent, on average, more for "green" products (but 40 percent would pay nothing more at all), think other people aren't making sacrifices either, and don't think they understand environmental problems. They earn less and are less well-educated than the three preceding groups and are blue-collar workers.

Basic Browns don't think they understand environmental problems, are willing to pay three percent more for "green" products, think individuals can do little about air pollution from auto exhaust, and rarely buy products made from or packaged in recycled material. They have the lowest incomes, are less well educated, are blue-collar workers (36 percent), men (55 percent), and disproportionately Southern.

The Roper Organization estimates that the population breaks down as follows: True-Blue Greens, 11 percent; Greenback Greens, 11 percent; Sprouts, 26 percent; Grousers, 24 percent; and Basic Browns, 28 percent. Thus, only about 22 percent fit the profile of an environmentalist. A J. Walter Thompson study in 1990 also classified a similar percentage (23 percent) of the U.S. population as environmentalists (cited in Hartman, 1992).

At the other extreme, the Grousers and the Basic Browns together make up 52 percent of the population. While both groups are relatively indifferent to the environment, the Grousers' view is that others aren't making sacrifices either. In contrast, the indifference of the Basic Browns is based on the belief that there is not much individuals can do about most environmental problems.

Environmental Consumer Education Programs

Tailoring Approaches and Delivery Methods to the Audience

Obviously, effective adult education programs are ones designed with knowledge of the audience. Consumers of various shades of green will respond differently to the same program. What does research suggest for educational program design?

Consumers who consider themselves to be environmentalists are likely to be an important component of the audience for many environmental consumer education programs. The Roper Report's (1991) True-Blue Greens may be the group *most* likely to participate in environmental consumer education programs. One might expect these consumers to be demanding, questioning information and sources and belittling materials that suggest simple solutions to complex problems.

Compared to True-Blue Greens, other consumers who may consider themselves environmentalists are less committed to the lifestyle changes that many believe are necessary to ameliorate the U.S.'s solid waste management problem. Most consumers are just beginning to accept minor inconveniences for the sake of the environment. Characteristic of this response is the Roper Report's Greenback Greens. A key characteristic of this group is the time pressure they feel. Delivery methods other than public meetings are more likely to reach the Greenbacks. Alternatives include publications, news media, mall exhibits, programs at the worksite, and videotapes.

Greenbacks are willing to pay far more than the average for products they consider "green." Thus, they may be especially receptive to educational programs in retail establishments.

Research indicates that a substantial portion of the population has ambivalent or even negative feelings about making changes for the sake of the environment. The Roper Report's Sprouts hold more ambivalent feelings that either True-Blue Greens or the Greenbacks. Sprouts are concerned about the environment but uncertain how much they as individuals can do. Designing environmental education programs to allow participants to define individualized answers to questions may be an effective approach.

To motivate behavior changes in audiences with negative perceptions (the Roper Report's Sprouts, Grousers, and Basic Browns), effective education programs must address attitudes. A key is motivation based on specific and realistic examples of behaviors that individuals can adopt that do make a difference. More than 50 percent of Sprouts and Basic Browns and 88 percent of Grousers believe that companies, not individual consumers, should solve the problems. Perhaps sharing specific examples of demonstration recycling programs, packaging reduction measures, and corporate environmental policies will show consumers that some companies are working to identify solutions.

Over three-fourths of the Roper Report's Grousers believe that other people aren't making sacrifices. Sharing statistics about rising participation in environmentally conscious behaviors may or may not be effective in changing the attitude of a Grouser. The belief that one needn't change because others aren't may be difficult to influence.

Children and teens are very aware of and concerned about the environment. However, children take environmental dangers very seriously (Hartman, 1992). Many of the environmental issues are complex; even adults have difficulties dealing with them intellectually and emotionally. "Problem-solving requires a confidence that solutions can be discovered and a healthy self-esteem about one's ability to find them" (Hicks, 1991, p. A20). Educators should carefully select the programs to be targeted to children; one criteria for selection should be that the program focuses on specific behaviors that children are able to adopt and that will make a difference.

Principles of Effective Environmental Consumer Education

"Enviroshopping" or environmental shopping education programs have become increasingly popular. Various government agencies, businesses, environmental and consumer organizations, and educational institutions have introduced programs directed to both adults and youth. Most programs target three to five behaviors -- the Rs: reduce, reuse, recycle, react, and refuse. Yet, often the programs suffer from one or more important deficiencies. Some programs are simply biased; their intent is to persuade consumers to abandon one or more packaging types in favor of another. Other programs are based on myths and misperceptions rather than facts. Still other programs consist primarily of lists of things that an environmentally aware consumer should do. Lists do not encourage the critical thinking that is essential to make decisions in an area in which the solutions -- and our perceptions of the problems -- are rapidly changing.

Below are basic principles that may guide educators in incorporating environmental education issues in effective consumer education programs.

1. Involve different interest groups. Involving different groups in program design and development will help to establish credibility for the program, ensure that the program offers a balanced perspective, and improve communication and support for the program (U.S. EPA, 1989).

2. Review materials for bias. Select references and resources with care. Industry as well as environmental and consumer organization materials are often one-sided. Try to find materials with a balanced approach. Consumer Education and Information: Guidelines for Business-Sponsored Materials (Society of Consumer Affairs Professionals in Business, 1990) may be helpful in evaluating materials (see also Zelenak, 1991).

3. Provide a positive message. Making consumers feel guilty about their current behaviors will achieve very little in the way of future behavior changes. To motivate behavior changes, individuals

must feel good about the positive behaviors they now practice and identify future behaviors that build on what they are already doing. Research also suggests that consumers are more likely to practice behaviors if they believe their individual actions will make a difference (Ellen, et al., 1991; Pieters, 1991; Schwepker & Cornwell, 1991). The "sick baby" approach (a persuasive tactic that emphasizes the gravity of the problem) may be risky because it may enhance concern at the expense of perceived effectiveness (Ellen, et al., 1991).

4. Effective education programs do not examine the environmental characteristics of a good or service in isolation from other relevant characteristics. Consumers make choices considering all relevant characteristics, not just environmental impacts. One goal of an environmental consumer education program should be to help consumers to evaluate the trade-offs that must be made. Even if the initial focus is, for example, a detergent's packaging, the educator must realize that many other characteristics are of equal or greater importance in choosing a detergent.

Also, environmental education should ideally be incorporated throughout consumer education, not just as a separate unit. The appendix includes just a few ideas of how environmental issues might be incorporated in various aspects of consumer education or personal finance programs or courses. Hopefully, readers will be able to identify many more examples.

5. Limit the amount of new information provided. Many of the terms used to discuss environmental shopping and solid waste management issues are new and confusing to consumers. Limit the use of terms to those that are widely used or essential to promote knowledge. For example, the term "precycling" is used in many environmental education programs. Yet it may only confuse the consumer who is struggling to decipher recycle, recycled, and recyclable.

6. Be prepared to dispel myths in your educational programs. Some consumers still believe that if we make trash biodegradable it will melt away. Others continue to believe that most aerosols and polystyrene contain chlorofluorocarbons and that paper is always better than plastic (Makower, 1991b).

Lynn Scarlett (1991) has identified 10 myths commonly believed to be true. Among those myths are:

- We are running out of landfill space.
- Americans are especially wasteful.
- Packaging is bad.
- Recycling is always good.
- Recycling paper saves trees.

Discussion of myths challenges consumers to clarify their thinking and examine options from a new perspective.

7. Avoid the temptation to present simple solutions to complex problems. The solutions are not simple and implying that they are is frustrating for consumers. For example, lists of absolutes (avoid disposables, use canvas shopping bags) ignore the trade-offs that consumers must make to adopt those behaviors. As Lynn Scarlett (1991, p.1) has noted, "Advise on what products are environmentally 'good' or 'bad' is often wrong."

8. The behavior change strategies that work best are aimed at specific, carefully defined behaviors, offer a sound rationale for the change, and encourage participants to set goals and/or make commitments (Geller, 1991). For example, most environmental shopping programs target three to five behaviors (the "Rs"). The "think globally - act locally" strategy encourages consumers to think of environmental solutions from a local, personal perspective.

While it is important to encourage participants in an educational program to make a commitment to a behavior change, it is also important that those commitments be realistic. The Hartman Group (1992) identified a "Green Evolution Paradigm" which describes the road to change that many consumers may follow:

1. Education and knowledge bring initial awareness of the need to change.
2. Repetition and reinforcement of the message induces concern and clarifies understanding.
3. Concern leads to a few minor and spotty actions.
4. Success with preliminary actions leads one to

more thorough-going change, generating both greater concern and consistently applied new behavior.

Thus, it is more realistic to expect small initial commitments (such as refusing a shopping bag when one isn't needed) than more drastic lifestyle changes. Yet consumers may see the small changes as insignificant unless a strong rationale for change is given.

Requiring a commitment to a behavior change as a part of the educational program also encourages participants to "own" the problem. For example, participants might sign "promise cards" which obligate the signers to engage in particular behaviors for a given period of time (Geller, 1991).

9. Design programs for the long-term. Significant behavior changes do not occur in a few days or even in a few weeks. Ultimately, most behavior changes are motivated intrinsically; consumers decide that it is the "right" thing to do. Consumers are more likely to continue intrinsically motivated behaviors because they feel the behavior is worthwhile "for its own sake" (DeYoung, 1984). Long-term educational programming is required to induce intrinsically motivated behavior changes.

10. Keep the goal in perspective. The goal of an effective environmental consumer education program is to promote consumers' awareness of the environmental consequences of their purchase decisions and to motivate long-term behavior changes. However, as author Karen Christensen (1991, p. 6) has noted, "We cannot save the planet by shopping." Joel Makower (1991a, p. 8), coauthor of The Green Consumer, cautions, "As Green Consumers, we have a responsibility not just to shop "green" but to move beyond the trivial, to use our buying power and our political power to help make changes where they really count."

As educators we have a responsibility to design education programs that also "move beyond the trivial." Our education programs should not merely teach people what to buy. An effective education program increases consumers' understanding of the interaction among consumers, government, and businesses in solid waste management issues. It considers the implications of consumers' use and disposal decisions as well as their purchase decisions. It also urges consumers to reexamine their lifestyle choices, which are the core of many other decisions we make (Stum, in press).

Final Thoughts

Some of the basic principles for effective environmental education may appear to conflict. For example, an easy way to limit the amount of new information consumers receive is to simply provide lists of environmentally conscious behaviors. Yet lists do not challenge consumers to make their own choices; lists also suggest the solutions are simple.

Designing programs that follow the guidelines will not be easy. However, the results should be high quality education that meets the needs of consumers.

Appendix

Suggested Topics to Incorporate Environmental Education Issues in Consumer Education

The Consumer in the Marketplace: Evaluation of the environmental implications of our chosen lifestyle; environmental ethics as a motivating value

The Consumer in Our Economy: Interaction of the roles of consumers, businesses, and government in solid waste management problems and solutions; interaction between demand for recycled products and packaging and availability of programs that collect recycled materials

Management: Management of time to collect recyclables

Saving, Investing, and Financial Services: Socially conscious investing

Taxes: Public financing of solid waste disposal alternatives; taxes as a disincentive to litter or to discourage use of specific packaging types

Consumer Services: Environmental implications as a criteria in selecting services such as fast food restaurants, dry cleaning, and auto repair and maintenance services

Housing: Energy efficiency; air and water quality; environmental impact of building materials; use and disposal of household hazardous wastes

Food: Trade-offs in convenience versus packaging; other packaging issues; organic produce

Transportation: Energy efficiency; air and water pollution from fuel choice; disposal options for used tires, batteries, oil, old cars

Clothing: Impact on the environment of synthetic versus natural fibers; impact of various cleaning products (for example, detergents) and alternatives (for example, dry cleaning)

Health Care: Disposal of waste; ethical considerations in animal testing of drugs and cosmetics

Recreation: Litter control in parks, beaches, etc; preserving national parks

Home Furnishing and Equipment: Energy and water efficiency of appliances; disposal options for used furniture and equipment

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Using the EXPN Public Use Tape from the Consumer Expenditure Survey: Practical Applications to Exploit Its Unique Features

William D. Passero, Bureau of Labor Statistics
Robert A. Cage, Bureau of Labor Statistics

This workshop was organized to demonstrate how the material on the EXPN tape could be used and to address come of the situations a user would encounter manipulating the files. Features of the EXPN tape were briefly reviewed. Three examples using the files were then examined. A synopsis of key points to remember was given.

Since April, 1991, the Division of Consumer Expenditure Surveys at BLS has produced an EXPN Public Use Tape from the Interview component of the Consumer Expenditure Survey for the years 1988 through 1990. This new tape incorporates echancements from the stnadard Interview survey Public Use Tape by including ono-expenditure data on the characteristics of items purchased by households in the United States.

The workshop session for the 1992 ACCI conference built on the introductory roundtable session of the 1991 ACCI conference by showing potential users how to use the files, with concrete examples of applications for the data. This took on added urgency in that they limited non-expenditure information available on the standard Interview tape is to be eliminated from the 1991 tape.

The session began with a brief narrative on the difference between the EXPN and standard Interview tapes. Three potential research questions were addressed in the body of the session. Participants received a 75-page handout of descriptive material about the tape and annotated SAS computer programs and output for data extraction, tabulation, and regression analysis. 1990 EXPN data was used in the examples.

The first example examined how vehicle purchases varied by month. It was designed to access and ust data from a single expenditure file, in this case the Owned Vehilces file, for analysis. The second example demonstrated linking policy data from the Hospitalization and Health Insurance file with work experience information from the Member Characteristics and Income files for the household member who obtained the policy. In the third example, a hedonic rent model was constructed and OLS regressions were run to test the model. Data on rented housing units came from three separate files: the Rented Living Quarters file; the General Survey Information; Major Household Appliances file; and the Consumer Unit Characteristics and Income files.

Users of the EXPN tape should remember a number of key points. Expenditures on the EXPN tape are presented by the reference period for which they are collected which may be weekly, monthly, or quarterly. Topcoding and non-disclosure restrictions can affect selected expenditure, income, and geographic variables. Flag variables associated with missing values identify whether they were due to valid or invalid non-response, so that users can convert these missing values appropriately in their analyses. The record origin variable identifies inventoried records that are carried over quarter to quarter for items such as insurance policies whefe payments are made on a regular basis. As multiple records may exist for the same policy, this variable can identify unique items and avoid duplicate records. A related issue is condensing data from multiple records of expenditures or inventory into one record. In our example, up to 15 records could exist for appliances owned by the family. Methods to convert this information into one record were shown. Users were reminded that the tape contained quarterly family and member characteristics and income files and annual expenditure files for each questionnaire section. Finally, users were cautioned that model specification can affect sample size as the rotating design of the Interview survey limits the number of families that give a full year's worth of data over the period covered by the files.

Life and Death Health Care Decisions:
Legal Rights, Policy Trends, and Consumer Education Challenges

Marlene S. Stum, University of Minnesota-St. Paul[1]
Karen P. Goebel, University of Wisconsin-Madison[2]

Individuals of all ages face the risk of experiencing incapacity and health care conditions requiring treatment decisions. This workshop presented an overview of the issue of life and death health care decision making, current legal rights and policy trends, and the dilemmas and decisions confronting consumers. Questions regarding the effectiveness of policies in ensuring consumer autonomy were raised and educational strategies presented.

The Issue

Life and death health care decision making has emerged in the last 20 years as a complex legal, ethical, and economic issue facing health care consumers, family members, health care providers, and society. Increasing life expectancies and the capacity of medical technology to control the circumstances and timing of death have raised many questions regarding the quantity and quality of life. In addition, health care providers now consider autonomy, or respect for the values and beliefs of the patient, as a guiding ethical principle along with beneficence (balancing good over harm) and justice in the decision making process. Given the reality that there is no obvious consensus as to what is good or bad in health care, individuals are allowed to make autonomous decisions with respect to the course and direction of their own lives.

Legal Rights and Policy Trends

The Supreme Court has consistently upheld a competent individuals right to refuse treatment removing liability of physicians if the provider is following the wishes of the patient. Non-initiation or withdrawal of life-sustaining treatment does not constitute attempted suicide as the decision is considered to be based on a wish to be free of medical intervention rather than a specific intent to die. Death typically follows from the underlying medical condition. If a patient is competent, or able to understand and appreciate the information needed to make a decision, informed consent procedures provide for autonomous decisions.

Issues surrounding autonomy and an individual's right to refuse treatment become more complex when a patient is incompetent or without the capacity to decide or communicate decisions. If an individual's wishes regarding treatment are known either through a written directive or a proxy decision maker, health care providers are legally obligated to act upon the patient's previously expressed wishes. Legal mechanisms referred to as advance directives permit competent individuals to express their preferences regarding medical care. Most state legislative activity has occurred in the past 5 years, 46 states plus the District of Columbia now have some state statute providing specific legal mechanisms to address medical decision making, living wills are the most common form. Many states have amended their advance directive legislation as a result of the Nancy Cruzan Supreme Court case decision in June 1990. States continue to address issues of types of treatment allowed, health care conditions in which directives apply, and what constitutes clear and convincing evidence of a person's wishes. A competent individual may also identify a proxy decision maker, or someone to make a "substituted judgement" for them if they become incapacitated. While all 50 states have Durable Power of Attorney statutes, 27 states specifically recognize the use of a Durable Power of Attorney for medical decisions as a result of legislative action. Some states allow individuals to appoint proxy decision makers but the proxy is often limited to acting when specific health care conditions apply (e.g., if terminally ill).

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[1] Assistant Professor, Family Social Science

[2] Professor and Extension Specialist, Consumer Science

If a patient is considered incapacitated without their wishes regarding treatment being known, many questions regarding who should decide and on what basis emerge. Surrogate decision making laws suggest who should step in and make decisions "in the best interest of the patient." Nineteen states have enacted specific legislation providing clear legal authority for family members as first priority to make health care decisions in the absence of advance directives. Court cases continue to add insight into surrogate decision making rights and procedures.

The first federal legislation regarding issues of autonomy and life and death health care decision making went into effect December 1, 1991. The Patient Self-Determination Act has three major purposes: 1) to make Medicare and Medicaid reimbursed institutions responsible for informing consumers of their state rights to accept or refuse medical treatment and to formulate advance directives; 2) to promote rationale institutional protocols and procedures regarding advance directives and treatment decisions; and 3) to improve education of staff and consumers.

The Challenges in Ensuring Consumer Autonomy

For autonomy to exist it is assumed, that at a minimum, consumers need information regarding their legal rights, knowledge of alternatives, the ability to comprehend their rights and options, and the freedom to act voluntarily. Many concerns regarding the effectiveness the current policy trends to ensure autonomy have been raised. Concerns revolve around individuals not completing advance directions and the poor quality of advance directives when they are completed.

While individual intentions to complete advance directives are good, only 10-20% of the population have completed advance directives. Lack of information, misinformation and the inability to comprehend legal and medical terminology contribute to the lack of advance directives completion. Wisconsin educational efforts have focused on overcoming these barriers by helping consumers sort out the facts from the myths regarding rights and terminology. Leader and member training materials and a factsheet regarding advance directives have been developed for use in the state. Educators can also focus upon improving the quality of advance directives and surrogate decision making. Educational efforts in Minnesota have focused upon helping individuals know where and how to begin to sort out their values and preferences regarding medical care, and then how to best communicate their wishes to health care providers and family members. Specific tools have been developed to help individuals examine underlying goals and preferred outcomes in medical care versus focusing on misunderstood specific treatments or using vague terms.

Increasing the Role of Consumer Educators

Consumer educators can play a pivotal role in helping develop appropriate resources to empower individuals and family members to make informed life and death health care decisions. Educators are encouraged to collaborate with professionals such as attorneys, clergy, and the range of health care providers in hospitals, skilled nursing facilities, home health agencies, hospice programs, and health maintenance organizations. Health care institutions are searching for quality educational resources and training resources as a result of the Patient Self-Determination Act mandating education for staff and the community. Many efforts are needed to improve the setting and timing of education regarding life and death health care decisions. Insights into the effectiveness of current policies to ensure consumer autonomy are also needed to guide further policy development. It is essential that the patient and family member perspective is understood and heard as life and death health care decision making policy and protocols evolve.

Consumers Want a Government Program for Health Care

Linda Lipsen, Consumers Union[1]

Where is the health care debate headed in the United States? Because I believe in truth in advertising, I'll present my conclusion, up front. Consumers are demanding a governmental solution to America's health care crisis and policy makers are beginning to get the message.

It seems fitting to discuss this topic with you in Canada---a country which unambiguously believes that health care is a right not a privilege. Our nation is still grappling with this basic moral question---right or privilege? I have some hope that because our health care system continues to price more and more people out of it, we will be forced to come out on the right side of this question.

I feel right at home with ACCI because we are all part of the same family. Actually, we are relatives. Consumers Union and ACCI were both founded by the tenacious Colston Warne. It gives me great satisfaction to say that we are descended from the man who was once deemed "the most dangerous man in America."

Our organizations continue in the "dangerous" tradition joint vision of educating consumers about the marketplace so that they may make rational choices. So actually---- we are just one big extended family here having lunch and talking about health care. My favorite theme.

If God made the universe in 6 days. Clearly, the Devil took advantage of the day of rest to make America's health care system. First, America's health care "system" leaves 37 million citizens out in the cold, some 60 million without adequate protection, and countless others in a state of profound insecurity.

That's the bad news or at least part of the bad news. The good news, from the perspective of an advocate for health care reform, is that there is brewing what appears to be a people's movement for comprehensive change. During the past two years, health care issues have moved from the back burner to center stage. Because of the urgency and political saliency of these issues, policy makers regularly make the pilgrimage to Canada to see how our neighbors live. What they find is a country which has been largely successful in providing universal coverage to all its citizens while holding down costs. The Canadians have built their system around the notion that everyone deserves health care regardless of their ability to pay.

The Canadian government accomplishes this objective through the elimination of the administrative waste that exists in the private insurance market, through the use of global budgets, and by financing through the tax code instead of through the payment of premiums, co-pays and deductibles.

We can learn a great deal from the Canadian single payer model. There is no justifiable reason to ignore Canada's rich 25 year history with a government financed system. The United States cannot continue to keep its head in the sand, while the rest of the industrialized world has a comprehensive health care system in place.

Defenders of the status quo attempt to distinguish our countries in order to make the point that this system could not work in the United States.

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[1] Legislative Counsel

If you doubt the political power punch of this issue, you should just take a gander at what the health insurance industry is busy doing these days. The health insurance industry (the entrenched interest with the most to lose in this debate) is in the middle of a $15 million public relations blitz (financed by your premium dollars) designed to instill fear and loathing about the Canadian system in the hearts and minds of American voters. Obviously, the insurance industry is plenty scared about the viability of the single payer option for the United States, as the price tag of their disinformation campaign clearly demonstrates.

While we are concerned about this multimillion dollar effort to confuse and distort, we do not believe Americans will find the messenger particularly credible. Clearly, we can build a uniquely American system which shares the most successful features of the Canadian model. The General Accounting Office estimated last year that switching to a single payer system similar to Canada's publicly funded health care system would save $67 billion.

As you know, Consumers Union believes in the private marketplace. Many of you may have used the magazine to help you make major purchasing decisions throughout your lives. Since 1936, we have tried to give consumers the tools to function in a market economy. Unlike some of our colleagues in the consumer movement, we are not the first in line to seek governmental solutions to problems when the marketplace just needs a good, swift kick in the right direction.

We rate vacuum cleaners and cars. We also rate the health care system. And from where we sit, a private system for financing health care like the one we have in the United States cannot adequately serve all consumers, nor can it keep costs in check.

As the Members of ACCI know, the task of educating consumers in the health marketplace is nearly impossible. Consumers know more about the cake mix they buy than the hospital they use for bypass surgery. For example, How many of you know consumers who when confronted with the potential for life threatening surgery will know how to shop for a hospital? People base their decisions on such considerations as where their family physician has privileges, where their friend had a nice room, where they receive their physical exam, or which hospital is closest to their homes. The cost of procedures is often only inquired about after the fact.

Shopping for the appropriate doctor for specialized surgery is equally daunting. Studies of the frequency of malpractice demonstrates there are only a few bad apples in the profession who are responsible for repeated acts of medical negligence. Unfortunately, consumers are not permitted to find out who they are.

In conventional markets high cost/low quality products are doomed. But not so in the health care market. Consumers are discouraged from comparison shopping for health care. There is no Consumer Reports for hospitals or doctors. There is no toll free number to obtain relevant death rates or to highlight technical specialties of hospitals. Providers discourage consumers from seeking information designed to help them make what can be life or death decisions.

The private insurance marketplace has failed consumers miserably. What we have in the United States is a private market playground where 1500 insurers chase after the best risks and do what ever they can to unload the bad risks, the sick or unhealthy.

The private insurance system thrives on exclusion to the detriment of consumers. More than 81 million people below the age of 65 have medical problems for which insurance companies often charge higher premiums, or exclude, or deny coverage all together.

Moreover, the private insurance system diverts billions of dollars away from health care into administration, marketing and profits. The insurance industry spends between 33.5 cents and 73 cents to provide $1 worth of health benefits. In comparison, Medicare spends about 2.5 cents to provide $1 worth of benefits, and the Canadian system spends less than 2 cents.

It takes 6,682 workers to administer 2.7 million Blue Cross/Blue Shield policies in Massachusetts, more than the total number of employees needed to administer the Canadian system, which serves 25 million people.

Our health care system is the costliest in the world. The U.S. spends 171% more per capita than Great Britain, 124% more than Japan, 88% more than West Germany, and 38% more than Canada. We pay more, much more---but get less. Many get nothing. We lag woefully behind the industrialized world in meaningful health indicators.

During the past 50 years, health care expenses (as per cent of GNP) have grown dramatically. In 1940, national health expenditures were 4.0% of GNP. It is expected that health care will consume 15% of GNP by the year 2000. Costs ride an "up" elevator to ever-higher levels while consumers ride a "down" elevator to lower coverage.

Politicians have been trying to move national health care up the domestic policy ladder for decades, with little success. What is different in 1992 is that the debate has moved far beyond concerns for the poor. This debate is no longer about any collective guilt we may feel about the very poor and disadvantaged. Rather, the renewed vigor for national health insurance reflects pure self interest among the middle class. For most voters this is a pocketbook issue, not an empathy issue.

Individuals without health insurance have many faces. They may be poor, since only 38 per cent of the poor receive Medicaid. But increasingly, lack of insurance coverage is a middle class phenomenon.

What is energizing the beginnings of a grassroots movement for comprehensive reform is the understanding that everybody---rich and poor, employed and unemployed, male and female, young and old---is at risk of being without health insurance. Even those of us who feel our employer-provided policies protect us well could be just one illness, or one accident, or one lay-off away from losing both our health insurance and our life savings.

Spiralling health care costs are leading to high premiums that force the middle income consumer (both employees of firms and the self employed) to drop coverage. Equally disturbing, the number of employers paying premiums is in free fall.

Working Americans are profoundly insecure about their health benefits. According to a recent New York Times poll, one in 10 Americans has stayed in a job they wanted to leave because of fear of losing health insurance coverage.

Americans' growing concern about ever escalating health care costs is beginning to crystalize into a demand for governmental action. According to a recent Wall Street Journal poll, a clear majority of voters believe the federal government has primary responsibility for reducing the high cost of health care. In 1988, only 10% of Americans thought their health care arrangement worked very well and 89% said the system needed fundamental changes. By contrast, the vast majority of Canadians are happy with their health care system.

According to Celinda Lake a noted public opinion pollster, "Americans believe that the market system has completely failed in the health care arena. They are so frustrated with the private health care industry, they believe even a governmental bureaucracy would prove more efficient and less costly health care." In one western state, Lake notes that two-thirds of voters agree that health care costs are so far out of control that only a government health care system can bring them under control. As Paul Starr wrote in American Prospect, what once was considered a way to spend more money on health care---national health insurance, has now evolved into a system of controlling costs.

In this decade, support for national health insurance has risen from 48% to 63%. (NYT 1980, 1990) As Robert Blendon, a respected health care scholar observed, "the public's enthusiasm for national health care now approximates the level of support for Medicare in the year before its enactment."

Harris Wofford's come from behind victory in Pennsylvania last November demonstrated that health care has become an issue of political salience. His campaign mantra, "If criminals have the right to a lawyer, working Americans should have the right to a doctor," secured his Senate seat and provided an attractive theme for many others running for public office.

The Wofford race was a symbolic wake-up call to the Bush Administration and to potential candidates that voters are serious about health care reform. Following the Wofford ascendancy, the House of Representatives held town meetings throughout the country to hear from constituents about their health care concerns. Despite efforts to stack these town meetings with representatives supporting the status quo (like insurance industry representatives, hospitals, and physicians) the overwhelming feeling expressed in these meetings was that it was time to adopt a nationally financed insurance program for all Americans.

Though the party leadership had attempted to downplay the single payer option, in favor of incremental reform, the call for fundamental reform of the health care system was the most expressed sentiment at these meetings. Clearly, candidates for the Congress are beginning to march to the drum of comprehensive health care reform. Congress may see as many as 4 new Senators whose campaigns were largely based on the need for national health insurance.

Moreover, the single payer bill pending in the House of Representatives currently enjoys more support--- with 69 cosponsors--- than any other single health care proposal pending in the 102nd Congress. Several states are seriously considering their own version of a Canadian style health plan.

So there is movement after many years of mind- numbing inaction. Consumers should remain vigilant and clear about what they want out of their health care system. We learned the hard way that if we support initiatives that do not adequately address the cost and access to care issues, we will not be successful. Many consumer groups supported the catastrophic health insurance bill a few years ago, only to see it repealed before it ever took effect. We supported the bill, as many others did, because the Secretary of HHS, Otis Bowen, was committed to pushing the legislation. Because of the Administration's support, we saw a window of opportunity passing some health insurance reform during a domestic policy famine. We learned an important lesson.

The problem was that voters had a great, more direct need for long term care coverage ---not catastrophic coverage. When the elderly found out they were not getting long term care coverage after the bill was passed, they rebelled against the legislation and sealed its doom.

The lesson here is that we should discourage efforts to do incremental reforms that do not adequately respond to the public's perceived problems with the health care system. In 1965, when the Medicare system was enacted, Congress was supposed to enlarge the program to include children the following year. Nothing has happened since enactment to make coverage more universal.

Similarly, efforts to dibble dabble in insurance market reform will not expand access to care or create a secure health care system for all Americans. Moreover, reform of the much maligned Medicaid system will not satisfy the desire for comprehensive reform.

There is an exciting coalition taking shape for national health care which includes workers, business, consumers, health care providers, persons with disabilities, and physicians. Whatever the outcome of this upcoming election, whether Clinton or George Bush takes the White House, the issue of comprehensive health care of all Americans is not going away.

If Congress and the President continue to sit on the sidelines while costs escalate into the stratosphere and more and more Americans go without adequate protection, the hue and cry for comprehensive reform will only increase. If consumers stick to their guns, and keep up the pressure for change, Congress may just roll up their sleeves and get to work to create an equitable, cost effective, high quality health care system.

Rent-to-Own Choices of Low Income Consumers

Sandra J. Cantrell
Deborah D. Godwin, University of Georgia[1]

This study addresses why consumers choose rent-to-own (RTO) contracts and their satisfaction with RTO. About 40% of low income consumers had used RTO agreements in the past. Three factors--respondents' age, perception of the costs of RTO and credit history--best differentiated users from nonusers of RTO. Users of rent-to-own were typically younger, were more accurate in their perceptions that RTO costs are high, and were more likely to have been turned down for credit.

Rent-to-own (RTO) agreements have increased substantially in number and sales value in recent years. The Association of Progressive Rental Organizations (1990) reported that there were over 7,000 retailers in 1990 that rented or sold goods via rent-to-own contracts valued at over $2.5 billion, a 67% increased since 1986("How to pay $1300...,1986) and a 150% increase since 1982 (Lee, 1983). Commentary and research on rent-to-own transactions has also increased, focusing on such issues as the characteristics of RTO users (Council of Better Business Bureaus, 1990; Henry, 1987; Lawrence, Cantwell, Carter, & Thomasson, 1989; Rath, 1983; Stein & Brown, 1988), the features of RTO contracts and users' experiences with them (Lamb, 1989; Tateraka, 1987) and existing and proposed legislation and regulation (Hoge, 1988; Lamb, 1989; Scott, 1984; Winn, 1989, 1990). The largest volume of research has targeted the costs of rent-to-own transactions, valid ways of measuring their costs, and comparisons of costs of RTO contracts with traditional credit arrangements (Caruso, Desobry, LeBeouf, Thomasson, & Lawrence, 1988; Curran & Leibovici, 1990; Stein & Brown, 1988; Swagler & Wheeler, 1989; Walden, 1989).

Little research has focused on why consumers choose rent-to-own arrangements, despite the well-documented high costs of such choices. One possibility argued by some researchers has been that consumers, particularly those with low education and income who appear to be a targeted market segment, have imperfect information about the costs of RTO (Stein & Brown, 1988; Swagler & Wheeler, 1989). Others have suggested that renting-to-own contracts offer benefits to consumers (such as immediate gratification, lack of hassle about their credit worthiness, and better repair service) that justify or at least contribute to an explanation of its higher costs (APRO, 1990; Henry, 1987; Scott, 1984). Another reason mentioned for consumers choosing RTO has been that they lack access to traditional methods of obtaining needed durable goods (Swagler & Wheeler, 1989). These possible explanations have not been assessed in a comprehensive multivariate analysis. Therefore, the first objective of this study was to investigate the factors related to consumers' choice of rent-to-own arrangements as a method of obtaining goods. This was accomplished both by examining their choices in a hypothetical scenario and by investigating their actual use of rent-to-own contracts in the past.

The second objective of the study was to investigate the factors related to consumers' satisfaction with RTO when they have used rent-to-own to obtain at least one durable good. Swagler and Wheeler (1989) found that many RTO users report substantial dissatisfaction with their

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[1] Associate Professor

Department of Housing & Consumer Economics experience and indicate that they did not understand the rent-to-own contract. Over half of their sample of RTO users indicated that they would not be willing to use rent-to-own arrangements again. Reasons for this variation in satisfaction and probability of future use need investigation because high levels of consumer dissatisfaction with renting-to-own would argue for changes in seller's practices and/or government intervention in the RTO market. Consumer's perceptions of the costs and benefits of renting-to-own and their perceptions of RTO as their only option may also influence satisfaction with the arrangement and future repeat use. In addition, whether they experience problems during the contract period should also relate to their satisfaction with the RTO experience.

Research addressing these questions provides several benefits. Not only may it shed more light on the reasons for consumers' choice of rent-to-own arrangements, a question of theoretical importance to consumer economists and educators, but it may also inform policy makers of the need for legislation or regulation of RTO transactions. Many states are in the early stages of implementing legislation or regulation of rent-to-own contracts and more states are considering such legislation (Cantrell, 1991; Stein & Brown, 1988). Increased information should enhance the effectiveness of efforts.

It has been nearly ten years since the rent-to-own industry began its explosive growth. Although previous research has helped identify the issues involved in the rent-to-own market, the relevant question remains: Why do consumers choose to use RTO and pay a total cost of two or three times the cash price to obtain the use of a TV, VCR, sofa or clothes washer? It is posited that consumers choose RTO agreements when (a) they perceive its benefits outweigh its costs, or (b) they perceive this as their only way to obtain access to the desired consumer goods. When consumers perceive that RTO is their *only* option for obtaining the good in question, they really have no motivation or basis upon which to evaluate the costs and benefits of the other options for obtaining goods.

Hypotheses

Lancaster's (1966) theory posits that consume maximize their utility by choosing an optimal combination of product characteristics subject to an income constraint. Consumers may be choosing RTO as the utility-maximization bundle of product characteristics available within their income constraint.

The first general proposition tested was that consumers choose rent-to-own over other options for obtaining a good when they perceive the net benefits of RTO to be positive. This proposition has three parts.

First, consumers, *ceteris paribus*, may believe the benefits of RTO to be higher than other options, such as buying on installment credit or saving money for a future cash purchase. Such benefits may include consumers' ability to have access to the good immediately, the lack of worry about their credit worthiness, the availability of in-home service and repair, and access to new consumer goods (such as VCRs) to which they otherwise might be denied. Attitudinal variables measuring consumers' perceptions of the benefits of renting-to-own will be used to capture this effect. The hypothesis was that consumers who perceive the benefits of RTO to be higher, *ceteris paribus*, will be more likely to choose rent-to-own, both in the hypothetical scenario and in their actual past use.

The second part of the proposition pertains to consumers' perception of the costs of RTO relative to their other options. If consumers end up owning the good in the RTO option, the total cost undoubtedly would be much higher than buying the good via other methods. There are several reasons why consumers may perceive RTO costs to be lower than they really are or lower than the costs of other options. First, they may not know the total costs of renting-to-own. Most retailers do not clearly display the total cost of "buying" via RTO and store personnel are generally trained not to reveal this cost (Stein & Brown, 1988). There is some evidence suggests many RTO customers have low levels of education and may not be able to do the mental arithmetic necessary to calculate total costs of various RTO contracts or may not be able to compare these costs to the costs of other options (Stein & Brown, 1988; Swagler & Wheeler, 1989).

A second reason that RTO costs may be perceived as lower is that consumers may not end up buying the good and, thus, may not actually pay the calculated total costs. Sporadic or short term rental of goods may result in a cash outlay much lower than the total costs calculated in all of the past comparisons of RTO and credit costs.

A third reason for the perception that costs of renting-to-own may be lower is the high rate of time discount of the individuals who use it (Swagler & Wheeler, 1989). If these consumers are intent on having the product now, they may heavily discount the costs of renting-to-own.

Three empirical variables were used to capture the effects of consumers' perceptions of the costs of renting-to-own. First, consumers' level of formal education was used as a general measure of their ability to assess its costs. Second, consumers' perception of the costs of renting-to-own versus using credit was measured. Finally, an index of their ability to accurately calculate the costs of renting-to-own was taken from three objective items asking respondents to calculate the costs of three example RTO transactions. The hypothesis was that the lower the education of the consumer, the lower they believe the costs of RTO to be, and the less accurate their knowledge of the example RTO costs, the more likely it is that consumers will choose RTO.

The third part of the proposition is that consumers may use RTO because they perceive it to be their only option. Lack of access to credit has been strongly suspected and confirmed by Swagler and Wheeler (1989) to be a motivating force behind renting-to own. Three variables will measure this effect. Consumers' age was measured on the assumption that young adults will have had less time to establish a viable credit rating and less experience with credit- granting institutions. Consumers' income may also reflect this effect; lower income consumers will, ceteris paribus, be less likely to have access to traditional forms of credit through banks, credit unions, and finance companies. Finally, asking whether the respondent has ever been denied credit was used as the most direct measure of this effect.

The second proposition to be tested addressed the factors affecting satisfaction of RTO users with their experiences. The same factors discussed previously as antecedents of consumer choice of renting-to-own were examined in relation to satisfaction. Specifically, consumers' satisfaction with their rent-to-own experience was posited to be a function of their perception of the benefits and costs of RTO and whether they perceive it to be their only option for obtaining goods. It was hypothesized that consumers would report more satisfaction with their experience when the net benefits of RTO were perceived to be higher and that they had options other than renting-to-own. Consumers' experiences during the term of their RTO contract (whether they experienced any problems, whether they ever missed a payment and whether they ever needed service or repair on the product) were examined in relation to their satisfaction. It was hypothesized that consumers who did not experience a problem, never missed a payment, and never needed a repair would be more satisfied than consumers who experienced these problems during their RTO contracts.

Methods

Subjects and Procedures

The sample for this study was selected from the residents of five randomly selected complexes of the public housing authority in a mid-sized Southern city. Residents are assigned to their housing units by the local housing authority as units become available, a naturally occurring random procedure that produces housing complexes of similar resident profiles. Data from the housing authority verified that the complexes involved in the study were similar in the number of housing units and the ages of the heads of household to the public housing complexes in the entire city. Data were collected from subjects at regular monthly resident meetings. One of the researchers was present at each meeting to explain the research project, administer the human subjects consent process, implement the data collection, and answer any subject's questions. A total of 105 subjects completed pencil-and-paper questionnaires at the residents' meetings during March, 1991. Although these subjects were not a random sample of the residents of all public housing in the city, the

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procedures used produced a sample that is representative of the city's public housing residents.

Instrument

The questionnaire, containing three sections, was developed by the researchers, based on revisions of previously used questions from Swagler and Wheeler's (1989) study as well as newly developed questions. The first section included a hypothetical situation about choices for obtaining a television and questions about respondents' attitudes, perceptions, and knowledge about rent-to-own issues. The second section contained questions about the demographic characteristics of the respondents. A third section included questions about the subjects' actual past experiences with renting-to-own and was answered only by those respondents who had used this arrangement at least once in the past.

The readability level of the questions was assessed using the Flesch Reading Ease Index and found to be readable for subjects with a fifth grade reading level. The questionnaire was pilot tested by the researchers with a sample of public housing residents (not included in the regular sample) prior to its revision and use in the study. The use of graphics illustrating the various choices available in the hypothetical scenarios was incorporated to make the questionnaire appear inviting and easy to answer. To check the reliability of respondents' answers to the hypothetical scenario about obtaining a television, a second scenario involving obtaining a clothes washer was also administered; most respondents gave consistent answers about their choices across the two scenarios. In addition, during the administration of the questionnaire in the group meetings, housing authority social workers were available to assist respondents who had difficulty reading the items[1].

Choice and use of rent-to-own arrangements. The subjects' hypothetical choice of renting-to-own vs. other options was measured. The subjects were given a hypothetical situation about obtaining a 19" television set and were asked to indicate which one of four different method of obtaining it that they would choose if they needed to get a TV: furniture store installment loan, layaway plan, rent-to-own arrangement, and cash purchase. The amount that they would have to pay today, the number and amount of any future payments, and when they would obtain the television were described for each option[2]. These four hypothetical plans were representative of the actual costs and payments of the various options, but the total cost of each option was not given. In the analyses, all of the choices that were not RTO were collapsed and compared to the RTO choice as a dichotomous variable.

Consumers' actual use of rent-to-own contracts in the past was assessed with a single dichotomous question. If respondents answered yes, instructions were given that they should answer a series of additional questions about their experiences. First, a question about whether the subject had ever missed an RTO payment was asked with two responses: yes or no. If respondents answered yes, they were asked to indicate the resolution of the situation; responses included nothing happened, they made double payment the next period, the RTO dealer picked up the rented item, or other (in which case they were asked to specify the details of what happened). A second question asked if the consumers had ever needed service on or repair of the product while renting-to-own. If the respondents checked yes, they were asked to report the outcome by indicating whether it was fixed in their home, replaced by a loaner item or whether nothing happened. A third item asked more generally if subjects had experienced any problems while renting-to-own. If respondents reported they had, they were asked to describe the problem they had in an open-ended format.

Satisfaction with RTO experiences. Rent-to-own users were asked, "How happy were you with renting-to own?' A five-point Likert-type scale response set ranged from "It was everything I wanted it to be" (coded 5) to "Not happy at all" (coded 1). The second question asked whether or not they would rent-to-own again. The three responses available were yes (coded 3), maybe (coded 2), and never again (coded 1).

Benefits of renting-to-own. The respondents' perceptions of the benefits of renting-to-own were measured in a series of five attitudinal questions with Likert scale responses. These questions were developed based on the industry's representation of the advantages renting-to-own has over conventional methods of obtaining goods (like cash purchases or credit). The items included: (a) "Rent-to-own plans give people a way of buying items that are new and up-to-date;" (b) Rent-to-own plans are easy for people who do not have credit or have bad credit records;" (c) Furniture stores offer better repair service than rent-to-own stores;" (d) Rent-to-own plans make it easy for people who can only make low weekly or monthly payments to buy things they need;" and (e) Rent-to-own plans give people a way to get things they need right away." The response set ranged from strongly agree (coded 5) to strongly disagree (coded 1); scores on the negatively worded item were reversed and then averaged. Scores for the items were summed. Higher scores indicated that consumers perceived the benefits of renting-to-own to be greater.

Costs of renting-to-own. Three variables measured respondents' perceptions of the costs of RTO arrangements. As a general measure of ability to utilize periodic payment information to calculate costs, respondents' education was measured in a single item asking about the number of years of school completed.

In a second question respondents were asked to compare the costs of renting-to-own versus credit. Four responses were available: The cost of renting-to-own is (a) less than buying on credit (coded 1), (b) about the same as buying on credit (coded 2), (c) a little more than buying on credit (coded 3), and (d) much more than buying on credit (coded 4).

A third variable measured the respondents' knowledge of the costs of RTO in three example transactions. Each transaction was about a specific product (a microwave, VCR, or a refrigerator). Information was given about the weekly and monthly payment, the term of the RTO contract, and/or the cash price[3]. Respondents were asked to indicate, in multiple-choice format, what the total cost of the RTO transaction would be if the products were purchased or how much higher the RTO total cost would be compared to the cash price. The knowledge score was derived by adding the number of items the respondent answered correctly.

Perceptions of RTO as only way of obtaining goods. Three independent variables measured respondent's ability to obtain goods with options other than renting-to-own. Subject's age was measured with an open-ended question. Whether the respondent had ever been turned down for conventional credit was measured with a single item with a yes, no, don't know response set. Income was measured indirectly by asking them how much rent they paid the housing authority. Since rent is based on a formula including the respondents' income, age, and number of family members, the household income could be computed from these variables[4].

Data Analysis

The questions involving respondents' choices of RTO in the hypothetical scenario and their actual use of RTO in the past were assessed using multiple discriminant analysis. Because the number of discriminating variables was large, given the number of subjects, preliminary bivariate analyses (ANOVA's and correlation coefficients) were used to narrow down the variables. Any variable that was significantly related to either consumer's hypothetical choice or actual use of RTO was retained for use in the multiple discriminant analysis. Backward elimination multiple regression was used to identify factors associated with RTO users' satisfaction.

Results

Consumers in the sample were predominantly Black or African-American women who had not completed high school. Most were relatively young (under 40), not employed and not currently married (either having never married or being divorced or widowed). Their incomes ranged from under $1000 per year to over $17,000 and averaged slightly more than $5000. The modal income was $2500-4999 indicating that the typical household has money income substantially less than the poverty level.

Discriminators of Hypothetical Choice of RTO

The seven discriminator variables that were statistically significant in bivariate analyses were entered into a multiple discriminant analysis (Table 1). The overall analysis could significantly discriminate between the two groups ($\Lambda = .795$, $p < .05$). The most statistically significant discriminating variables were (a) consumers' perception of the cost of renting-to-own and (b) their perception of the benefit of rent-to-own in giving people a way of buying items that are new and up-to-date. When consumers who chose the RTO option were compared to those who did not, those who chose the option perceived that it was less expensive compared to buying on credit and that it was more beneficial in that RTO allowed access to new consumer goods. Two other variables, consumers' age and their perception of the benefit of RTO in providing a low periodic payment, approached statistical significance ($p < .10$) as predictors of the rent-to-own choice. Consumers who chose RTO in the hypothetical choice were younger consumers and those who perceived RTO as more beneficial in providing low periodic payments.

Classification results for this discriminant analysis (Table 1) show the ability of the seven-variable model to classify sample members into their correct group on the dependent variable--hypothetical choice of rent-to-own vs. other options. Overall, the analysis was able to correctly classify over three-fourths of the consumers into their correct group. Over 90% of the consumers who chose the RTO option were correctly placed into that group based on their characteristics, and nearly 75% of the consumers who chose another option were classified correctly.

Discriminators of Actual Use of RTO

The seven variables representing the consumers' perceptions of the costs and benefits of RTO and the existence of RTO as their only option were included as discriminating variables in the multiple discriminant analysis presented in Table 2. The overall analysis was statistically significant ($\Lambda = .766$, $p < .01$), indicating that the seven variables included can significantly discriminate between consumers who have and have not ever used RTO contracts. Three variables were significant discriminators--consumers' age, whether they had been turned down for credit in the past, and their perception of the cost of RTO vs. conventional credit options. Consumers who had used RTO in the past were younger, were much more likely to have been turned down for credit, and perceived the cost of RTO to be relatively higher, when compared to their counterparts who had not used RTO. A fourth variable which approached significance was consumers' education; it appears that consumers who had used RTO were more educated than those who had never rented-to-own. This difference is in the direction opposite to that expected. The difference is not great and may be an artifact of this sample.

Two-thirds of the sample were correctly classified. The analysis was more successful with the rent-to-own group. Of those who had actually rented-to-own in the past, over three-fourths were correctly classified, whereas only about three-fifths of non-users were correctly classified.

When the results of this analysis are compared with that for the hypothetical choice presented earlier, only two of the discriminating variables (consumers' age and their perception of the cost of rent-to-own) were consistent in showing a relationship to both dependent variables at $p < .10$. In both cases, younger consumers favored RTO more than older consumers. But, in the case of perceptions of the cost of rent-to-own, the relationship differed depending on whether the dependent variable was hypothetical choice vs. actual use. Consumers whose hypothetical choice was rent-to-own were less likely to perceive its costs as much higher than credit. Consumers who had actually used rent-to-own contracts perceived its costs to be higher than did nonusers of RTO. Perhaps this difference results from the increased knowledge of the costs of renting-to-own that comes from actually making the payments. A key variable that showed discriminating power in the analysis of actual RTO use that did not affect the consumers' hypothetical choice was whether they had been turned down for credit. Consumers who had been turned down for credit had used RTO in the past more than their counterparts who had not used RTO, but there were no differences in the proportion who had been denied credit among the two groups based on the hypothetical choices.

RTO Users' Experiences with Rent-to-Own Transactions

Of the 41 respondents who reported having used RTO, over two-thirds reported having had no problems while renting-to- own (Table 3). The most frequent problems reported by these consumers were related to RTO dealers repossessing the products when the consumers became delinquent.

Table 1

Discriminant analysis of hypothetical choice of RTO in obtaining television

Variable	Chose RTO	Did not choose RTO	F-value
	Mean (s.d.)		
BENEFITS OF RTO			
Benefit of buying new items	3.64 (1.03)	2.73 (1.20)	5.64*
Benefit of low periodic payment	3.82 (.87)	3.03 (1.29)	3.85'
COSTS OF RTO			
Education	10.7 (1.4)	10.4 (2.5)	0.21
Perception of cost of RTO vs. credit	.36 (.51)	.41 (.47)	4.58*
PERCEPTIONS OF LIMITED CHOICES			
Age	28.9 (6.8)	38.5 (16.9)	3.41'
Income	$4258 (783)	$5173 (3450)	0.76
Turned down for credit	.46 (.50)	.44 (.52)	0.01

Wilk's lambda = .795   F-value = 2.06   p = .045

Actual group		Classification into:	
	Chose RTO	10 90.9%	1 11 9.1%
	Did not choose RTO	18	5371

Hit ratio = 63/82 = 76.8%

*p< .05   'p< .10

Of those subjects reporting that their merchandise needed service or repair, over half of the consumers reported that they received a loaner while their product was being repaired, another 40% reported that the product was fixed in their home, and only about 8% of the consumers reported that no repair or service was obtained from the RTO dealer. Repair service is considered by the RTO industry as a key benefit and selling feature of renting-to-own; this claim appears to be supported by the data reported here.

When asked how satisfied they were with their RTO experiences, over half of the RTO users, fell into the middle category, reporting that "it was OK." About one-fifth, fell at either extreme of the scale, reporting, "it was everything I wanted it to be" or "I was not happy at all."

Respondents varied considerably in their responses to whether they would be likely to use RTO again. Over 40% indicated that they would, another one-fourth indicated that they might, and about one-third indicated that they would not ever use RTO again. Likelihood of future use was positively correlated to satisfaction (r = .48). When respondents reported that they were satisfied with their past rent-to-own experiences, they were more likely to consider using it again.

Factors Related to RTO Users' Satisfaction with their Experience

Fourteen variables representing the consumers' perceived need for using RTO and the benefits and costs of RTO were possible determinants of RTO users' satisfaction. Because of the relatively small number of subjects compared to the number of independent variables that were hypothesized to affect the level of satisfaction of RTO users, backward elimination regression was used. Variables were retained in the equation as long as their associated p-values were less than .10. The results presented in Table 4 show that six variables met this criteria.

Three of these variables were significant at conventional significance levels. Consumers who were more knowledgeable of the costs of renting-to-own vs. conventional credit arrangements

Table 2
Discriminant analysis of actual use of RTO

Variable	Have used RTO	Have not used RTO	F-value
	Mean (s.d.)		
BENEFITS OF RTO			
Benefit of buying new items	2.71	2.96	0.81
	(1.25)	(1.18)	
Benefit of low periodic payment	3.03	3.21	0.42
	(1.32)	(1.23)	
COSTS OF RTO			
Education	10.9	10.0	3.02 '
	(1.21)	(2.95)	
Accurate perception of cost	.77	.55	4.29 *
	(.42)	(.50)	
PERCEPTIONS OF LIMITED CHOICES			
Age	29.8	42.7	14.80**
	(6.2)	(19.1)	
Income	$5162	$4967	0.07
	(2298)	(3808)	
Turned down for credit	.60	.32	6.80 *
	.50)	(.47)	

Wilk's lambda = .766 F-value = 2.78 p = .009

Actual group		Classification into:	
	Have used RTO	27	8 35
		77.1%	22.9%
	Have not used RTO	19	28 47
		40.4%	59.6%

Hit ratio = 55/82 = 67.1%

***p < .001 *p < .05 'p < .10

Table 3
Description of RTO user's experiences with Rent-to-Own

Variable		n	%
Occurance of problem(s) in RTO			
	Yes		1131.4
	No		24 68.6
			35100.0
Missed payment in RTO contract			
	Yes		2362.2
	No		14 37.8
			37100.0
Good needed service or repair			
	Yes		2670.3
	No		1129.7
			37100.0
Satisfaction with RTO experience			
	5 "It was everything I wanted it to be."		821.1
	4		12.6
	3 "It was OK; not great but no bad problems either."		2052.6
	2		25.3
	1 "Not happy at all."		7 18.4
			38100.0
Likelihood of using RTO again			
	Yes		1642.1
	Maybe		1026.3
	Never		12 31.6
			38100.0

Table 4
Regression of RTO users' satisfaction with their experience

Variable	b-value (Std. error)	Beta	t-value
Income (100's)	.150	.25	1.76 ·
	(.086)		
Knowledge of RTO costs	-.495	-.33	-2.78 •
	(.178)		
Benefit of buying new and up-to-date items	.390 (.161)	.36	2.43 •
Benefit of access to goods despite no or poor credit record	.293 (.159)	.22	1.84 ·
Benefit of better repair service	.285	.25	1.81 ·
	(.157)		
Experienced problem w/ RTO	-1.369	-.46	-3.40 ••
	(.403)		
Intercept	0.59		
	R^2		.66
	Adjusted R^2		.58
	F-value	7.68	•••

• $p < .05$ •• $p < .01$ ••• $p < .001$ · $p < .10$

were less satisfied than less knowledgeable users. RTO users who believed the benefits of RTO were greater in terms of allowing access to new and up-to-date items were more satisfied than other users. Consumers who experienced a problem during their rent-to-own contract period were less satisfied than those who had no problem.

The other variables which entered the regression equation were income and the perceived benefits of access to goods and better repair service. RTO users with higher incomes, who believed that RTO gaves them access to goods despite a poor credit rating, and those who percieived repair service as a benefit, were more satisfied with their RTO experience than other RTO consumers. Overall, these six variables accounted for almost two-thirds of the variance in RTO users' satisfaction with their experiences.

Discussion and Implications

Over 40% of a sample of residents of public housing in a middle-sized Southern city had used rent-to-own contracts. This supports the assertion that low income consumers are a market segment targeted by the RTO industry. This proportion, however, was higher than the percentage of consumers who chose the rent-to-own option in a hypothetical scenario with four choices for obtaining the same good. This suggests that consumers may be using RTO contracts because their realistic chances of using other options such as installment credit, layaway or cash purchases are limited.

In the question simulating the choice of a television set, consumers who selected RTO as a means of obtaining the television perceived the benefits of RTO to be higher than those who did not select the RTO options, both in terms of allowing them access to new and up-to-date items and in terms of RTO's short-term "affordability" (via the low periodic payment). Those who had used RTO did not perceive the benefits any differently than nonusers. Among those who have used rent-to-own, consumers who were more satisfied with their experience perceived the benefits of RTO as positive in terms of access to new and up-to-date goods. Consumer advocates must recognize that in the view of some low-income consumers, there are benefits that accompany the use of RTO that may make their choices rational and justify the existence of the market for rent-to-own contracts.

It is likely that many consumers do not know how much they are paying for RTO benefits. Hypothetical choosers of RTO had misconceptions about its cost; they were less likely to say that RTO costs much more than traditional credit than those subjects who did not choose RTO. Once consumers had used RTO, they were more likely to say it costs much more than traditional credit. It appears that consumer's misconceptions are corrected with use of the arrangement. The more accurate consumers' perception of the cost of RTO, the more dissatisfied they were and the less likely they were to repeat its use.

About twice the proportion of RTO users to nonusers, had been turned down for credit in the past. This suggests that if consumers had more knowledge of and access to options other than renting-to-own, their use of RTO might decrease.

Consumer educators, RTO retailers, and policy makers would do well to attend to the findings about problems experienced by rent-to-own users and their satisfaction. The high proportion of users who reported problems and the relationship between experiencing problems and likely repeat use should serve as a warning to RTO retailers. If they do not attend to these problems and levels of dissatisfaction, it is likely that legislative and regulatory authorities will become more stringent in their requirements for RTO contracts and information disclosure about them.

Endnotes

1. The complete instrument is available from the author.
2. The options were: (a) furniture store loan:\pay $50 today, make payments of $50 a month for 18 months, and get the TV today; (b) layaway plan: pay $30 today, make payments of $92 a month for 3 months, and get the TV in 3 months; (c) rent-to-own: pay $15 today, pay $15 a week for 18 months, and get the TV today; (d) pay cash: save $4 out of paycheck this week, save $4 each week for 18 months, and get TV in 18 months.

3. The three examples transaction were: (a) If you bought this microwave (advertised at $10 a week or $40 a month) under an 18 month rent-to-own plan, it would cost about...; (b) If you bought this VCR (advertised at $10 a week or $50 a month) under a 52 week rent-to-own plan, it would cost around...; (c) If this refrigerator (advertised at $900 cash) costs $1984 on a rent-to-own plan, how much would you be paying for the rent-to-own service?

4. The calculation for respondents income was:
For household heads under 62 with no children:
Income = (Monthly rent x 12)/ .30;
For households heads over 62 with no children:
Income - ((Monthly rent x 12) x .30) + $400;
For households heads under 62 with children
Income = (Monthly rent x 12) + (.30 x ($480 x No. of children))) /.30;
For households heads over 62 with children
Income = (((Monthly rent x 12) / .30) + $400 +
($480 x No. of children)).

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Modeling and Simulation as a Consumer Economics Research Tool: An Application to Consumer Arbitration

Kealoha L. Widdows, Economics, Wabash College, Crawfordsville IN
Richard Widdows, Consumer Sciences and Retailing, Purdue University, West Lafayette IN

This paper develops a theoretical model of a firm's product quality choice under alternative dispute resolution mechanisms when product quality is not directly observable. Simulation techniques are used to determine the effect of the introduction of consumer arbitration on mean product quality in a baseline case, and to determine the impact of changes in the model parameters (including policy variables) on the firm's choice of quality. In all cases, product quality under a litigation only scenario is at least as high as that under arbitration.

Introduction

It is the purpose of this paper to make a case for modeling and simulation as a tool for answering policy questions in the consumer economics field. The particular area selected for this paper, consumer arbitration, has been studied by survey and econometric analysis.[1] The objective is to construct a simple theoretical model of the process and obtain some additional insight into the real world through simulations using the model. The model, because of the large number of parameters exogenous to the model, generates few comparative statics results by itself. However, simulations using data from the real world can confirm or deny the existence of phenomena which may be suspected from theoretical work but which are difficult to track down through surveys and econometric work.

Consumer Arbitration

Since the passage of the Magnuson-Moss Warranty Act and FTC Rule 703 in 1975, privately-sponsored arbitration has become an increasingly popular means of resolving disputes between buyers and sellers in issues of product quality and warranty performance. The assumption implicit in the FTC's endorsement of these arbitration boards was that such mechanisms would ultimately enable the consumer to obtain high quality goods at a lower cost than if litigation only were available as a means of resolving disputes. In addition, binding arbitration has been heralded as a new panacea for resolving civil disputes more quickly and cheaply than would be possible through the increasingly overcrowded and costly court system.

Given the new opportunities for using arbitration mechanisms for dispute resolution and the potential resource savings associated with their successful implementation, the question of the larger effects of arbitration on the customer-firm relationship naturally raises itself. In this paper, we choose to examine the impact of the introduction of one-way binding arbitration on product quality when neither the buyer nor the seller are perfect judges of quality and legal action is costly.

The first Consumer Action Panel (CAP) was established in 1971 by the Association of Major Appliance Manufacturers. Since then, a number of industries have introduced various types of third-part dispute resolution mechanisms to arbitrate disputes over product quality between the buyer and the seller. These CAP's hear thousands of complaints annually from consumers of such diverse products as automobiles, home appliances, new homes and funerals. On a very general level, it is easy to see what industries using third-party mechanisms have in common. First, such firms sell relatively expensive durable goods which consumers will not simply discard and replace if they are dissatisfied with the product's performance. Second, these products are typically accompanied by a partial warranty under which the seller or her agent agrees to replace the item if both buyer and seller agree that the item is defective. Under the provisions of this type of warranty, there are numerous possibilities for dispute if neither the buyer nor the seller can observe product quality costlessly.[2]

In the United States, litigation has been the traditional means of resolving disputes in issues of product quality and liability. However, litigation is increasingly expensive and time-consuming for both the firm and the consumer. CAP's have emerged as an alternative means of resolving disputes between buyer and seller at a lower cost than litigation. They are invoked when negotiations between seller and buyer break down, and when mediation, if attempted, fails. They usually take the form of a panel of arbitrators composed of both consumer and firm representatives whose decisions are typically binding only upon the firm.

Although CAP's are less costly than litigation, they have been subject to criticism by consumer advocates on several grounds. First, since CAP's are generally established and operated by the firms whose products are under scrutiny, it is possible that the arbitrators will not be independent. Furthermore, since CAP's are an extra-legal mechanism, firms have the opportunity to conceal possible design defects which may otherwise which may otherwise have resulted in a costly and damaging class-action suit, a recall, or both. It is this latter point which motivates our model, in which we examine a manufacturer's decision to establish an arbitration board to deal with disputes over product quality which would otherwise be resolved through litigation. Section III presents the basic structure of the model. The actual mathematics of the model of firm choice of mean quality under the two scenarios is relegated to the Appendix. In Section IV, we examine the theoretical effect of the mandating of arbitration as a means of dispute resolution on mean product quality. Section V uses simulation results to assess the relative profitability of the litigation and arbitration scenarios. Section VI concludes the paper by assessing the usefulness of the simulations and suggesting future extensions of the work.

Modeling Consumer Arbitration: Assumptions and Definitions

We assume that a single firm produces and sells n units of a product through local dealerships. The manufactured products are of two possible types -- high quality and low quality. For a given level of unit cost, there is an associated probability t that each of the n units produced will be high quality and a probability (1-t) that each unit will be of low quality. It is assumed that unit cost of producing higher quality goods, c(t), is increasing in t at an increasing rate, so that $c'(t) > 0$ and $c''(t) > 0$. The products are shipped costlessly from the manufacturers to the dealers, who then sell them to consumers. The price received by the manufacturers is p, which is assumed exogenous to the model. It is reasonable to assume that both p and n are exogenous in the context of a one-period model where production and pricing decisions are made *ex ante*.

Quality is not *ex ante* observable to either the buyer or the seller, but there is a partial warranty in effect such that the manufacturer agrees to replace the item if both the buyer and the seller agree that the unit is in fact low quality. The probabilities that the buyer and the seller correctly assess the true product quality are denoted by p_c and p_s, respectively. It is assumed that these probabilities are independent, and that they are at least 0.5 in magnitude.[3]

After the consumer purchases the product, she assesses its quality. If she judges the unit to be of high quality, she retains it. If she believes it to be low quality, however, she returns it to the seller under the terms of the warranty. The seller will decide to repair or not repair the unit based on her own independent assessment of the quality of the product. If the seller also believes that the product is low quality, she repairs the unit at a cost (to the manufacturer) of $g per unit. If the product is in fact high quality, but both the buyer and the seller believe it to be low quality, we will assume that the cost of repairing the unit and certifying it to be high quality is also assumed to be $g.[4] It is less expensive to repair the product than to replace it, so $g < p$.

Litigation and arbitration enter the picture when the buyer and the seller disagree about the product's quality. If the buyer believes the product to be low quality while the seller insists that it is high quality, the buyer proceeds to litigation in an effort to obtain a high quality product.[5]

The per case cost of litigation to the firm is $F_l > g$ per unit, and it is assumed that each party bears her own legal costs regardless of the outcome of the proceedings.[6] For the sake of convenience, the judge is assumed to be omniscient, i.e., able to ascertain the true quality of the product. It should be noted that it is the relative accuracy of the court compared to the arbitrator which is significant to the results of the model, and that the model can easily be generalized to include courts which are imperfect assessors of quality.

In the event that the courts find in favor of a threshold number of m of the n consumers who have purchased the product, a recall ensues whereby the manufacturer is forced to repair (or certify as high quality) all of the n units sold. The actual recall process is assumed to be costless to the firm.[7]

The firm also has the option of establishing its own arbitration board as a means of resolving buyer disputes. The fixed cost of such a mechanism is assumed to be zero, and the cost per case of processing complaints is assumed to be $F_2 < F_1$. That is, it is less expensive to process a case using the arbitration panel than by going to court.[8] If this mechanism is available, it is assumed that the buyer proceeds directly to arbitration if a dispute over product quality arises.[9] Unlike the judge, however, the arbitrator is not omniscient; that is, there is some (independent) probability $p_a \geq 0.5$ that the arbitrator correctly assesses the true quality of the product. In the event that the arbitrator finds in favor of the manufacturer, the buyer proceeds to litigation;[10] however, if the arbitrator's decision favors the consumer, the manufacturer is obligated to repair (or certify) the product at no cost to the buyer.

Comparison of the Equilibrium Values of Product Quality

Our objective is to examine what would happen to the firm's choice of t, mean product quality, if all firms were to establish an arbitration program. In order to answer this question, we must first outline how the firm chooses t in the first place. Suppose that management decides to increase mean quality incrementally. Since quality is expensive, we know that the company's production costs will increase by some amount as the firm improves quality control. There are, however, benefits associated with this improvement in quality; less repairs are necessary, fewer consumers will take complaints to the courts, and the probability of a recall is diminished.[11]

We shall refer to the marginal explicit (production) cost of changing quality control as c'(t), and the marginal benefits of changing t under the litigation only scenario as $MB_L(t)$. The firm will increase t until the marginal benefits from doing so no longer exceed the costs. At that value of t (which we shall call t*), $c'(t^*) = MB_L(t^*)$. The details of the model have been relegated to the Appendix; Figure 1 below presents a simple schematic representation of the argument.

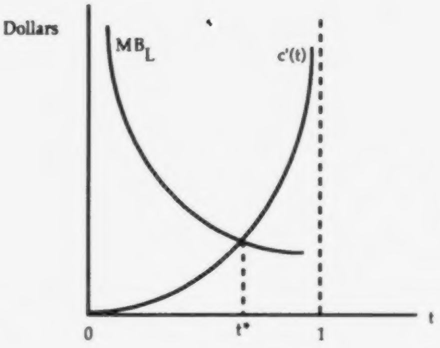


Figure 1

In the case of arbitration, the explicit marginal cost of changing t, is the same as it would be under the litigation only scenario; however, the marginal benefits will be different. Certainly, since arbitration is less expensive than litigation, there is an immediate net benefit involved in going to an arbitration system. However, there are some buyers who go through arbitration who will also litigate; and the arbitrator (who, unlike the judge, is an imperfect judge of quality) may require sellers to perform repairs for buyers whose products are not actually defective. The arbitration process does, however, act as a sort of filter by satisfying some disgruntled buyers before they sue the firm. Thus, the introduction of arbitration will unambiguously reduce the probability of a recall. Any change in t will marginally affect all of these benefits. The amount by which the net benefits change when t changes incrementally under the arbitration scenario will be referred to as MB_A. As in the litigation only scenario, the firm will continue to increase t until the marginal benefit of doing so no longer exceeds the marginal cost. We will call the optimal value of t under the arbitration scenario t**.

The question we will pose is whether the introduction of arbitration increases or decreases the optimal choice of mean product quality under the litigation only scenario, t*. In other words, if each firm were required to establish an arbitration system in order to help resolve consumer disputes, what would be the effect on its choice of t? Consider Figure 2 below.

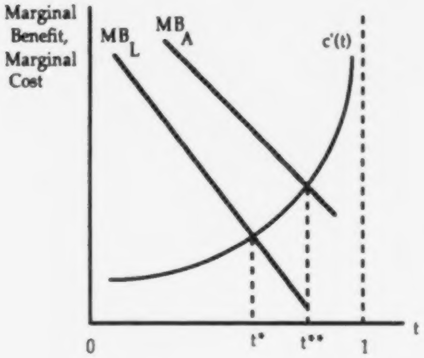


Figure 2

If it can be shown that $MB_A > MB_L$ for all values of t then it follows that the introduction of arbitration will improve mean product quality; that is, t**>t*. On the other hand, if $MB_A < MB_L$ for all values of t, then the opposite conclusion will hold: the introduction of arbitration will reduce the firm's optimal choice of t, and t** will be less than t*.

From the theoretical model, the direction of the inequality will depend on the various values of its parameters. The parameters are: p_c, p_s and p_a, the probabilities that the agents correctly assess product quality; F_1 and F_2, the costs of litigation and arbitration to the firm; g, the cost of repairs; and m and n, the number of consumer court wins necessary to trigger a recall and the total number of buyers respectively.

With this many parameters, it is a daunting task to identify the mathematical properties of the model. However, by simulating the model with plausible values of the parameters, a baseline case can be evaluated to determine the effect of the introduction of arbitration on product quality. Beyond that, the sensitivity of the baseline case can be assessed through discrete changes of the parameters.

The Simulations

The values of the parameters that constitute the baseline case simulations are as follows: p_c and p_s are each .5 (see footnote 3). P_a is a convex combination of p_c and p_s such that it falls midway between p_c and p_s. F_1, the per case cost of litigation, is $5,000, while F_2, the per case cost of arbitration, is $80.[12] Repair costs, g, are $400. The total sales of the product, n, are 100 units while m, the total number of wins in court necessary to trigger a recall, is 10.[13] For the baseline case and all subsequent cases, simulations were carried out using Mathematica[14]6.

The baseline marginal benefits of litigation and arbitration as quality increases from 0 to 1 (perfect quality) are shown in Figure 3. In Figure 3, the downward-sloping portion of MB_L is above and to the right of that of MB_A. Given that the optimal product quality is determined where c'(t) intersects the downward sloping portion of the appropriate marginal benefits curve, the implication is that under the baseline scenario, t*>t**.[15] In other words, the optimum quality chosen by the firm is higher under litigation only than under arbitration for the baseline case.[16]

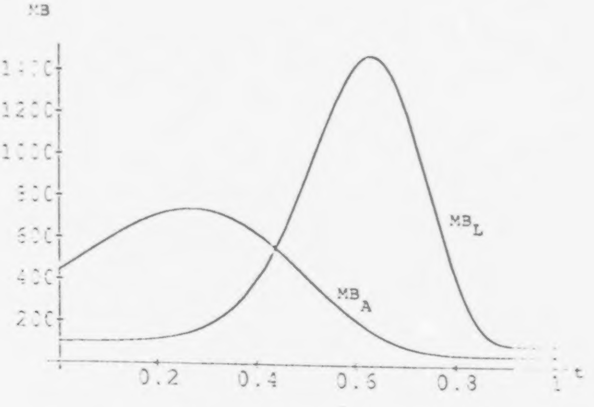
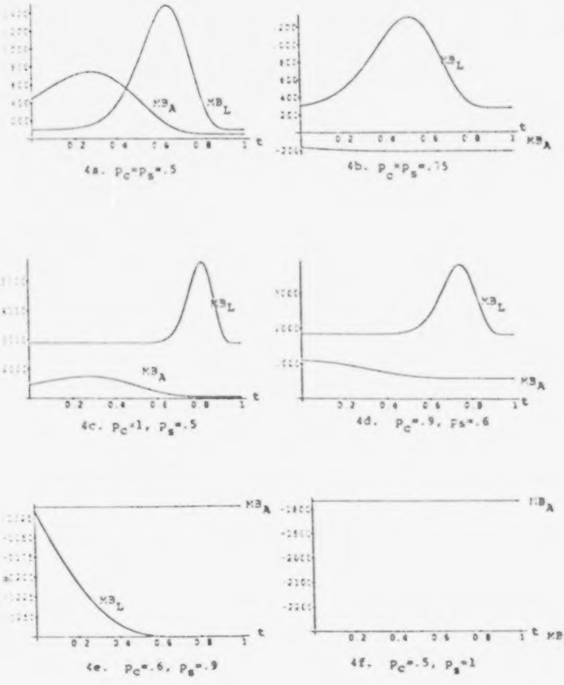


Figure 3

The next question we pose is, how do the marginal benefits change under different probabilities of the consumer and the seller judging quality correctly (p_c and p_s)? Figure 4 presents the some examples of simulations with different values of those probabilities. These changes are made *ceteris paribus*, that is, with the other parameter values at their baseline levels. Figure 4 is set up so that the top row contains results when p_c is equal to p_s, the second row for p_c greater than p_s, and the third row for p_c less than p_s. To begin, note that when p_c is less than p_s (4e and 4f), the marginal benefits of increasing t are negative under both scenarios. This implies that the optimal choice of quality is t=0 under both cases. In other words, when the seller is a better judge of quality than the buyer, the firm chooses to produce only low quality products.



4a. $P_c=P_s=.5$

4b. $P_c=P_s=.75$

4c. $P_c=1$, $P_s=.5$

4d. $P_c=.9$, $P_s=.6$

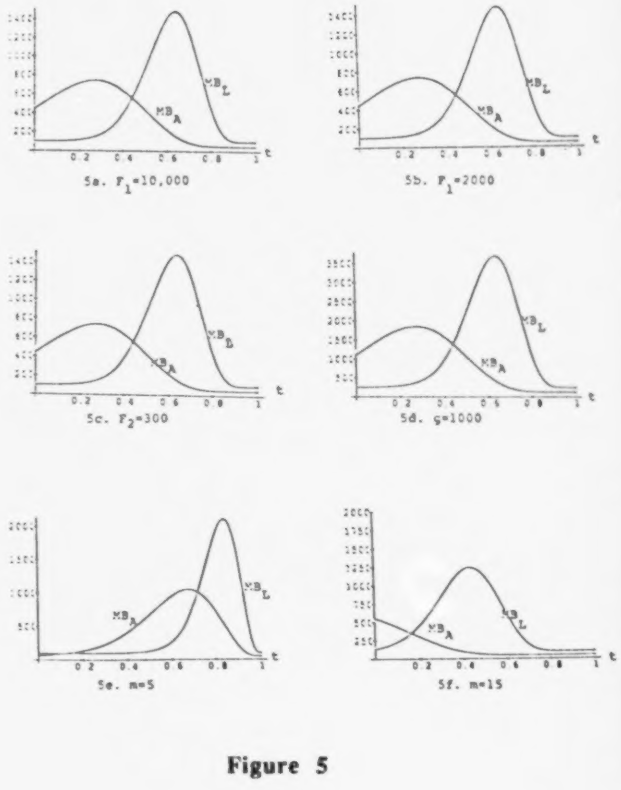
4e. $P_c=.6$, $P_s=.9$

4f. $P_c=.5$, $P_s=1$

Figure 4

In the remaining four cases depicted in Figure 4 (4a through 4d), the optimal quality chosen by the profit-maximizing firm is strictly between 0 and 1 under both scenarios. However, because MB_A is less than MB_L, we can conclude that t** is less than t* in each case. That is, the firm will always choose a lower mean level of quality under arbitration than under litigation only.

The results of simulations in which various single values of the other parameters are changed are presented in Figure 5. Each simulation was performed using the baseline values of the other parameters. First of all, note that 5a through 5c are identical. In other words, changes in the costs of arbitration (F_2) and the cost of litigation (F_1) do not affect the optimal choice of t. It is important to note that this results from the equality of p_c and p_s (and hence, p_a also). Under different assumptions about the relative probabilities of judging quality correctly, changes in F_1 and F_2 might indeed affect the optimal t. Under the assumptions of the present model, however, we can conclude that if the seller and the buyer are equally likely to judge quality correctly, changes in the cost of dispute resolution will not affect mean quality.



5a. $F_1=10{,}000$

5b. $F_1=2000$

5c. $F_2=300$

5d. $g=1000$

5e. $m=5$

5f. $m=15$

Figure 5

An increase in the value of g, the cost of repair, shifts both marginal benefit curves upward, as shown in Figure 5d.[17] Thus, the optimal choice of t increases in both scenarios, although t* will still exceed t** with the new value of g.

The last row of Figure 5 presents two alternative scenarios for the value of m, the number of wins in court required to trigger a recall. It should be pointed out that m can be interpreted as a policy variable reflecting the responsiveness of the regulatory authorities to product quality issues. Note that as m decreases (Figures 5e and 5f), both marginal benefit curves shift to the right, implying an increase in the optimal choice of t in both cases. In other words, more stringent pro-consumer policy does indeed cause firms to increase the mean quality of their products. However, note that the marginal benefit under litigation still exceeds the marginal benefit under arbitration, implying that arbitration reduces the mean level of quality relative to the litigation only scenario. This is, as noted, true of all the cases examined in Figure 5.

Conclusion

The objective of this paper was to construct a theoretical model of the firm's choice of mean quality under various dispute resolution scenarios, and to perform some simulations using plausible parameter values in order to investigate the implications of introducing arbitration on product quality. The reason this technique was employed was to demonstrate the value of using simulation techniques in consumer economics research when theoretical models alone fail to generate predictions.

The previous section outlined the results of the simulation in the form of a series of diagrams showing the marginal benefits of increasing mean quality under arbitration and under litigation only. When the optimal choice of quality was not 0, we found that the firm always chose a higher mean quality level under the litigation only scenario. It was also suggested that when the consumer is not as well-informed as the seller, the firm chose to produce only low-quality products. In addition, we showed that a more stringent recall policy increased the firm's optimal quality choice under both scenarios, and that an increase in the cost of repairing a defective product also led the firm to choose a higher mean quality under both scenarios.

Clearly, these results depend on the specific choices of parameter values and are thus by no means general. Further research would enable a broader range of parameter values to be investigated so that more general conclusions may be drawn. A parallel research project of a more empirical nature would attempt to specify exactly the parameter values for the baseline case by survey research or other methods. Last, the theoretical model may be extended to encompass more realistic assumptions about the way consumers and firms make decisions to take legal action.

APPENDIX

Profit Maximization with Litigation Only

We now proceed to characterize the firm's choice of t, mean product quality. When litigation alone is the means of resolving disputes, the firm's expected profits can be written as follows:

$$E(\pi_L(t)) = pn - c(t)n - gn\big((1-t)p_cp_s + t(1-p_c)(1-p_s)\big) - \ldots$$
$$\ldots - Fn\big((1-t)\,p_c(1-p_s) + t(1-p_c)p_s\big) - gn\phi(t) - \ldots$$
$$\ldots - gn\sum_{i=m}^{n}\binom{n}{i}\phi(t)^i(1-\phi(t))^{n-i} \tag{1}$$

where $\phi(t) \equiv (1-t)p_cp_s$ is the probability that each of the n consumer sues and wins in litigation against the firm.

The first two terms in (1) amount to total revenues net of production costs. The third term represents the expected costs to the firm of repairs under the terms of the partial warranty which states that the dealer will repair the unit at the manufacturer's expense if the dealer agrees that the product is low quality. The fourth term expresses the expected legal costs incurred if the dealer and the consumer disagree about product quality. Expected court awards is expressed by the fifth term, and the last term represents the expected cost of a recall.[18] To see this, note that the probability of each of the consumers eventually winning a suit against the firm is $\phi(t)$; conversely, the probability of each consumer *not* winning in court is $1 - \phi(t)$. We are thus dealing with a binomial distribution with mean nf(t). The probability that any number m of the n consumers winning is given by

$$\binom{n}{m}\phi(t)^m\cdot(1-\phi(t))^{n-m};$$

the probability of any number (m+1) consumers winning is

$$\binom{n}{m+1}\phi(t)^{m+1}\cdot(1-\phi(t))^{n-m-1},$$

and so on. Thus, the probability of *at least* m of the n consumers winning in court[19] is given by

$$\sum_{i=m}^{n}\binom{n}{i}\phi(t)^{i}(1-\phi(t))^{n-i}$$

which, when multiplied by the cost of the recall, gn, yields the expected recall cost given that at least m wins are required in order to trigger a court-ordered recall.[20]

Since n is assumed constant in this one-period model, the only choice variable of the firm is t. Rearranging the first-order condition for a maximum yields the following familiar equation of marginal cost and marginal benefit:

$$c'(t^*) = g(p_c + p_s - 1) + F_1(p_c - p_s) - g\phi'(t^*)\left(1 + \binom{n}{m} m\,\phi(t^*)^{m-1}(1-\phi(t^*))^{n-m}\right)$$

(2)

The second-order condition is assumed satisfied.[21] The righthand side of (2) represents the marginal benefit (MB_L) to the firm of incrementally increasing the probability that each unit will be high quality. Since both p_c and p_s are between 0.5 and 1.0, it is clear that the first term of MB_L is non-negative. In other words, an increase in t will always result in a decrease in the expected cost of repairs under the terms of a partial warranty.

The sign of the second term of MB_L is unclear. That is, the change in the expected legal costs depends on whether the consumer or the seller is a better judge of quality. If the consumer is a better assessor, then an increase in t will result in a reduction in expected legal costs for a corresponding increase in marginal benefit. On the other hand, if the seller is a more accurate judge of quality, then an increase in t will result in higher expected legal costs. The last term of MB_L, representing the change in expected recall costs, is clearly positive (since $\phi'(t) < 0$) and is increasing monotonically in t. Thus, an increase in t will result in a reduction in expected recall costs and therefore an increase in expected profits.

In general, the larger p_c is relative to p_s, the larger the benefit associated with increasing mean quality. That is, the better judge the consumer is of product quality, the greater the gains associated with improving average quality. For which classes of products are consumers likely to be better judges of quality than dealers? In general, those products for which failures occur randomly rather than breaking down all at once are likely to be more accurately judged by consumers who can observe the product perform over extended periods of time.

Profit Maximization with Arbitration

If the firm chooses to establish an arbitration board to rule on consumer-seller disputes prior to the litigation stage, expected profits may be written

$$\begin{gathered}E\,\pi_A(t) = pn - c(t)n - gn((1-t)p_c p_s + t(1-p_c)(1-p_s)) - \ldots \\ \ldots - F_2 n((1-t)p_c(1-p_s) + t(1-p_c)p_s - gn((1-t)p_c(1-p_a)p_s + t(1-p_c)p_a(1-p_s)) - \ldots \\ \ldots - F_1 n[(1-t)p_c(1-p_s)(1-p_a) + t(1-p_c)p_s p_a) - \ldots \\ \ldots - gn\varphi(t) - gn\sum_{i=m}^{n}\binom{n}{i}\varphi(t)^{i}(1-\varphi(t))^{n-i}\end{gathered}$$

(3)

where $\varphi(t) = (1-t)p_c(1-p_s)(1-p_a)$ is the new probability that each of the n consumers wins a suit against the firm.

The first three terms coincide with the corresponding terms in (1). The fourth term expresses the expected cost of arbitration given that consumer-seller disputes always go to arbitration before litigation. The fifth term represents the expected cost of arbitration awards to consumers; expected legal costs are expressed by the sixth term. Expected court awards are expressed by the seventh term, and the last term expresses the expected recall cost given the new probability of each consumer eventually winning a suit against the firm. Note that the new probability of each consumer winning, $\varphi(t)$, is strictly less than the old probability, $\phi(t)$. That is, the addition of an arbitration panel always lowers the probability of a consumer winning in court because it provides an additional "screen" through which low quality products can be caught and repaired.

The first-order condition for a maximum reduces to the following equation of marginal cost and marginal benefit:

$$\begin{gathered}c'(t^{**}) = g(p_c + p_s - 1) + F_2(p_c - p_s) + g(p_c(1-p_a)p_s - (1-p_c)p_a(1-p_s)) + \ldots \\ \ldots + F_1(p_c(1-p_a)(1-p_s) - (1-p_c)p_s p_a) - \ldots \\ \ldots - g\varphi'(t)\left(1 + \binom{n}{m} m\,\varphi(t^{**})^{m-1}(1-\varphi(t^{**}))^{n-m}\right)\end{gathered}$$

(4)

where t** represents the profit maximizing value of t given the introduction of arbitration into the dispute-resolution process. Again, the second-order condition is assumed to hold.[22] We will refer to the righthand side of (4) as MB_A, the marginal benefit of an increase in t under the arbitration scenario.

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Author's Notes

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Endnotes

1. See, for example, Widdows [1987], [1988], [1989].

2. See Palfrey and Romer [1983].

3. In other words, it is assumed that buyers and sellers do at least as well as they could by deciding product quality by tossing a fair coin.

4. We essentially are saying that the repair process does not damage a high quality product in any way.

5. The assumption that the consumer always litigates deserves some additional explanation. We are implicitly assuming that the consumer believes the courts to be omniscient and also believes that her own subjective assessment of product quality is correct. In assuming that the consumer always litigates, we are implicitly saying that the cost to the consumer of going to court are less than the benefits, which the consumer believes to be p, the cost to the consumer of replacing the product. Violation of any of these assumptions might explain the actual low rate of litigation over product quality disputes.

6. This is the usual method of allocating court costs in the U.S. In the United Kingdom, in contrast, course costs for both parties are paid by the winner of the suit.

7. Again, this assumption is not terribly unrealistic. The repairs themselves constitute the bulk of recall costs to the firm. Costs of notification are small by comparison, and the consumer frequently has the responsibility of transporting the item to the dealer for repair.

8. This is clearly a very reasonable

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assumption, particularly if one includes the opportunity cost of time in the figure for court costs, and is well-documented in the literature. See, for example, Widdows[1987].

9. The strength of this behavioural assumption is buttressed by the inclusion of arbitration in the terms of the warranty, as per FTC Rule 703 (16 CFR 703) under the Magnuson-Moss Warranty Act. Note that consumers who participate in arbitration panels typically are not represented by attorneys. Hence, the cost of participating is primarily the cost of preparing the case.

10. Again, we emphasize that the consumer believes her own subjective assessment to be correct. If she believes the court to be omniscient, then she will proceed to litigation as long as her court costs are less than p. In a more complex model, we would allow the consumer to update her beliefs about the quality of the good based assessments of the other agents.

11. Note that these benefits actually take the form of reduced costs of dispute resolution.

12. See Goodman [1982] for a discussion of the costs of arbitration.

13. The use of small numbers for m and n is 6to facilitate simulation on a microcomputer. Larger values for m and n could certainly be included in a more extensive study.

14. See Wolfram [1988].

15. The reader is reminded that only an intersection of c'(t) and the downward-sloping portion of the marginal benefit curve constitute a stable equilibrium.

16. It should be emphasized that the use of the word optimal or optimum refers to the choice of quality from firm's point of view, that is, the profit-maximizing level of t.

17. In Figure 5d, this upward shift is represented by an increase in the values on the vertical axis.

18. It is important to identify that one of the assumptions implicit in this formulation of recall costs is that even consumers who have previously had their products repaired at the dealer will return their products to the manufacturer for certification, at a cost to the firm of g per unit. Note also that we assume that all consumers return their products to the manufacturer for repair or certification. In essence, this amounts to an assumption that the costs to the consumer are small and that the firm has no difficulty in contacting consumers who have purchased products during that period.

19. It should be noted that the binomial distribution can be approximated by the beta distribution. The probability of at least m wins can then be written

$$\int_0^{\omega} \frac{n!}{(m-1)!\,(n-m)!} z^{m-1} (1-z)^{n-m} \, dz$$

20. Of course, it is unlikely that government agencies would adopt such a simple rule in order to determine when recalls should occur. We use this approach only in order to suggest a way of modelling the degree of consumer pressure that is necessary in order to trigger a recall, other things equal. Under pro-consumer administrations, for example, we can think of m as being relatively small.

21. The second-order condition requires

$$c''(t^*) > gm\binom{n}{m}\left[\phi'(t^*)\right]^2\left(\phi(t^*)\right)^{m-2}(1-\phi(t^*))^{n-m-1}\left[(n-m)m\phi(t^*)-(m-1)(1-\phi(t^*))\right]$$

22. Let $\varphi(t) = \phi(t)(1 - p_a)$. Then the second order condition requires

$$c''(t^{**}) > gm\binom{n}{m}\left[\varphi'(t^{**})\right]^2\left(\varphi(t^{**})\right)^{m-2}(1-\varphi(t^{**}))^{n-m-1}\left[(n-m)m\varphi(t^{**})-\right.$$

Complaints, Redress, and Subsequent Purchases of Medical Services by Dissatisfied Consumers

Jane Kolodinsky, University of Vermont[1]

Estimation of a block recursive model of complaints, complaint resolution, and subsequent purchase of medical services by dissatisfied consumers indicates that consumer action may not help increase quality of medical services. It may, however, increase competition in the medical industry, albeit at a cost borne specifically by the consumer.

539.9 billion dollars were spent on health services in 1987 and rises in the cost of health care have surpassed rises in the general consumer price index every year since 1966 (Health Insurance Association of American 1990). The general consensus of many is that medical costs are out of hand, and the quality of medical care is not optimal. One way to help contain costs and increase quality of care is to increase medical care consumerism; that is, have clients assume more responsibility in their care (Beisecker 1988). Complaining about dissatisfaction with medical care is one form of consumerism. It can be added to the list of other consumer oriented activities, including doctor shopping (Pauly and Satterthwaite 1981; White-Means 1989), and should produce the same results. First, it can lead to a higher quality of care provided at a given cost if complaints are resolved. Second, if clients are dissatisfied and a problem goes unresolved, clients can switch medical service providers, increase competition in the industry, and drive prices down.

Review of Literature

Despite their apparent importance, relatively few studies have examined dissatisfaction and complaints about medical services (Best and Andreasen 1977; Andreasen 1985; Singh 1989; Singh 1991). Some studies have focused on satisfaction of patients with mental health services (Corrigen 1990; Heath et al. 1984).

In general, research has found that demographic variables have some effect on complaining behavior. Increases in age are associated with increases in patient satisfaction and decreases in complaints (Andreasen 1985; Corrigan 1990; Singh 1991). Beisecker (1988) found that the older a consumer, the more likely they are to "put themselves in the hands of the provider." Women tend to complain more, to know more about the medical industry and to have lower expectations about complaint resolution (Heath et al. 1984; Andreasen 1985; Singh 1991). More highly educated consumers tend to be more satisfied with mental health care (Corrigan 1990). But, there is no conclusive evidence that increases in education or income are associated with actual complaints to care providers or with expectations of complaint resolution (Singh 1991). Consumers who are employed, have children, and have higher incomes are also more dissatisfied with medical services (Andreasen 1985). Interestingly, increases in the prices paid for mental health services are associated with increases in client satisfaction (Heath et al. 1984).

One of the ways in which services are distinguished from products is that they are intangible (Shiffman and Kanuk 1991). Eiglier et al. (1977) go farther and cite the Oxford English Dictionary to define two aspects of intangibility: palpable and mental. Because services can not be touched, consumers may have difficulty in creating appropriate mental images of a service. Indeed, Zeithaml (1981) cites medical diagnoses as the most difficult for consumers to evaluate of all goods and services, given their credence qualities. That is, consumers may not be able to evaluate the service as being "good" or "bad" even after it is rendered.

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[1] Assistant Professor, Merchandising, Consumer Studies and Design

Hirschman (1970) indicated that consumers' reactions to dissatisfaction have, in part, to do with how the industry is organized and medical services may be categorized as being a "loose monopoly" industry. Both Andreasen (1985) and Singh (1991) have interpreted Hirschman's (1970) description of loose monopolies. Some of the characteristics include limited availability of alternatives, restricted information, consumer's beliefs of their ability to judge quality, long repurchase cycle, lack of impact of taking action, and inhibitions consumers have about voicing complaints. Thus, consumers might be less adept and willing to complain when dissatisfied.

The above discussions point to the expectation that relatively few consumers will actually complain directly to a seller of medical services. Of 21 business groupings put together by the Better Business Bureau, over one-third were service related. These services accounted for almost 50 percent of the total activity related to complaints in 1990. Of the 21 categories, medical services ranked 10th in the number of inquiries, but accounted for only 2.37 percent of complaint activity (Council of BBB 1991). Relative to other service industries, consumers voice their dissatisfaction about medical services to sellers less often than for other services (Best and Andreasen 1977; Singh 1991). Andreasen (1985) found that only 8 percent of consumers voiced their dissatisfaction to the medical provider, Best and Andreasen (1977) found 22.5 percent voiced dissatisfaction, and Singh (1991) found that 48 percent voiced dissatisfaction.

But, voicing dissatisfaction to sellers is an important way for the quality of goods and services to improve in the marketplace. When consumers choose either to take no action or complain privately to friends, relatives, or through boycotts, sellers often have no indication as to why sales decline. When consumers voice their complaints to sellers, they are made aware of problems and are able to address them. By identifying factors that influence the voicing of medical complaints, strategies that increase voice can be outlined, and increases in complaint resolution obtained. Increases in the quality of medical care should be the ultimate reward to the consumer.

Best and Andreasen (1977) found that 56.5 percent of all service complaints to sellers were resolved but the resolution rate for medical services was only 35.5 percent. Singh (1991) found that consumers' perceived responsiveness to complaints about medical services was lowest of three categories of services, including grocery and auto-repair. Compared with studies by other researchers, summarized in Gilly (1987), the figures are lower than those consumers who stated satisfactory resolution of complaints for consumer products.

There are no studies that examined the exit option, or "vowing never to use the service again," even if a complaint may have been resolved by a provider of a medical service. Gilly (1987), however, examined this relationship using oil company data and found no relationship between a company's actual complaint responses and consumer repurchase behaviors. When examining only the incidence of exit, Andreasen (1985) found that 63.2 percent and Singh (1991) found that 49 percent of respondents chose the exit option instead of complaining to the seller. It is the exit option of medical consumerism that may be an important factor in increasing competition in the medical industry, which may ultimately lower medical costs.

Methodology

Modelling the Complaint Process

Von Weizsacker's (1971) work on endogenous changes in tastes has provided a framework for examining complaining behavior using an economic framework. This framework allows a fairly diverse set of variables to be included in the estimation of complaints, complaint resolution, and subsequent demand. These variables are drawn from the four major streams of complaint research, characterized by Andreasen (1988): the cost/benefit, restraints, learning, and personality approaches.

A short-run utility function is maximized in each of several periods to obtain "optimal" levels of demand in each period. After demand is ascertained, a consumer may learn that their behavior was "sub-optimal". Preference structures change accordingly and demand becomes a function of demand in a previous period. Complaining behavior has be modelled in this way with fairly robust results for the general categories of personal and professional services. (Kolodinsky 1990a; 1990b). A consumer is dissatisfied, complains, the complaint is resolved or not, and the consumer makes or does not make a subsequent purchase.

This model has been expanded upon to include decisions that occur simultaneously, and has been applied to the general category of personal and professional services (Kolodinsky 1991). It is very likely that when a consumer decides on whether to voice a complaint directly to a seller, a variable that influences the decision is the likelihood that the provider will resolve the complaint. In a world where scarcity of time is prevalent, efficient consumers should take the probability of effectiveness into consideration. On the other hand, the probability that a seller will resolve a complaint is a function of whether or not a consumer is likely to voice a complaint. Bryant (1988) has suggested this scenario. This complicates the basic model in that no longer do we have a simple recursive model, where each event follows one another. The model is now a block recursive one in which some events follow one another and others are simultaneously determined.

Conceptually, this model is not difficult to compose. Complaints can be written as a function of the probability of resolution, economic factors including prices and income, preference shifters, including personality traits, and indicators of learning, and non-pecuniary and time constraints. The probability of complaint resolution can be written as a function of complaints and supply side factors. Subsequent demand of the good or service that originally caused the complaint can be written as a function of complaints, complaint resolution, economic factors, and preference shifters.

Data

Data were collected by a mail survey sent to a simple random sample of 1500 households in a New England State in the Spring of 1989. The questionnaire was developed in three-steps. First, questions were developed by examining survey instruments of other researchers interested in consumer complaining behavior and the quality of services (Day and Landon 1977; Ash and Quelch 1979; Duhaime and Ash 1981; Day and Bodur 1977; Marketing Science Institute 1985; Berry, Zeithaml, and Parasuraman 1985). Next, the questionnaire was tested using a panel of experts skilled in survey research. Finally, students in a university level Consumer Motivation course pretested the instrument.

Table 1. Descriptive Statistics

Variable	Definition	Dissatisfied Sample	Entire Sample	Non-Response
PRICE	Price of service	696.33^m (3206)	122.71^m (683)	na
INCOME	Annual family $	28166^m (16377)	31857^m (20833)	na
YNGKIDS	# of kids under 6	.24^p	.16^p	.18^p
OLDKIDS	# of kids ≥ 6	.33^p	.32^p	na
SIZE	Company is large	.18^p	na	na
URGE	incentive for consumer voice	.29^p	na	na
AGE	Age of respondent	44^m (13)	48^m (15)	50^m (16)
COLL	completed college	.58^p	.59^p	.23^p
PREPUR	Dissatisfied	.61^p	na	na
DISAT	very dissatisfied	.39^p	na	na
FEMALE	female	.49^p	.45^p	.48^p
MARRIED	married	.62^p	.75^p	.69^p
RURAL	rural resident	.48^p	.38^p	.38^p
HOURS	weekly hours worked	29.8^m	29.1^m	na
COMPLNTS	# of complaints	1.55^m	na	na
RESOLVE	complaint resolved?	.21^p	na	na
BUYAGAIN	purchase again?	.58^p	na	na
		N=90	N=509	N=100

^{m}Mean value is given
^{p}Proportion of the sample is given
Standard deviations are given in parentheses

The survey consisted of three sections. The first collected information about satisfaction and complaining behavior associated with services: one of the service categories was medical services, either in an office or hospital setting. The second section included a list of statements about consumerism and feelings toward the business community. The final section collected demographic information. A total of 509 questionnaires were returned completed. Of those completed, 90 observations (17.6 percent) expressed dissatisfaction with a medical service, and 39 (38.9 percent) voiced their complaint to the seller. 100 non-respondents were contacted to identify whether they differed from respondents in a systematic way.

Table 1 describes the entire sample, the dissatisfied sample, and the non-respondents. The dissatisfied sample differs significantly from the entire sample with regard to four variables: price of the item, income, age, and number of young children. Those dissatisfied with medical services spent more on the services, had lower incomes, were somewhat younger, and had fewer young children at home. Non-respondents were significantly older, had less education, and had fewer younger children. Previous research has shown that older consumers and those with less education may have tendencies toward being more satisfied with medical services (Heath et al. 1984; Corrigen 1990). Only one non-respondent indicated dissatisfaction with a service during the 12 months preceding the survey.

Empirical Specification

Empirically, a block recursive series of equations is used to estimate number of times a consumer complains, the probability of a complaint being resolved, and the probability of subsequent demand of the service by a consumer. The structural equations are written as follows:

$$(1)\ \text{COMPLAINTS} = \alpha_0 + \alpha_1\text{DISAT} + \alpha_2\text{COLL} + \alpha_3\text{AGE} + \alpha_4\text{FEMALE} + \alpha_5\text{URGE} + \alpha_6\text{YNGKIDS} + \alpha_7\text{OLDKIDS} + \alpha_8\text{PRICE} + \alpha_9\text{FAMINC} + \alpha_{10}\text{HOURS} + \alpha_{11}\text{BUSINESS} + \alpha_{12}\text{CONSUMER} + \alpha_{13}\text{RESOLVE} + \text{error1}$$

$$(2)\ \text{RESOLVE} = \beta_0 + \beta_1\text{DISAT} + \beta_2\text{AGE} + \beta_3\text{FEMALE} + \beta_4\text{URGE} + \beta_5\text{SIZE} + \beta_6\text{PRICE} + \beta_7\text{COMPLAINTS} + \text{error2}$$

$$(3)\ \text{BUYAGAIN} = \delta_0 + \delta_1\text{DISAT} + \delta_2\text{COLL} + \delta_3\text{AGE} + \delta_4\text{FEMALE} + \delta_5\text{URGE} + \delta_6\text{YNGKIDS} + \delta_7\text{OLDKIDS} + \delta_8\text{PRICE} + \delta_9\text{FAMINC} + \delta_{10}\text{RURAL} + \delta_{11}\text{HOURS} + \delta_{12}\text{BUSINESS} + \delta_{13}\text{CONSUMER} + \delta_{14}\text{RESOLVE} + \delta_{15}\text{COMPLAINTS} + \text{error3}$$

Clearly, equations (1) and (2) must be simultaneously determined because number of complaints is dependent on whether a complaint will be resolved and resolution of a complaint is dependent on how many complaints are made. This is the "block" portion of the block recursive specification. Equation (3) is determined after (1) and (2) are estimated and is the "recursive" portion of the block recursive specification.

Several factors must be considered when choosing an estimator for this system. First, one must prevent the simultaneous equation bias that occurs if Ordinary Least Squares (OLS) regression analysis is used to estimate each equation. This bias would occur because error1 and error2 are not independent of one another when a dependent variable appears on the right hand side of an equation. Second, only 39 of 90 respondents complained about a medical service. If OLS were used to estimate equations (1) or (2), sample selection bias would also occur. Third, the probability of a complaint being resolved and the probability of making a subsequent purchase are both limited dependent variables. That is, they are reported as 0 or 1; either the complaint was resolved or not, or a subsequent purchase was made or not. OLS is inappropriate when limited dependent variables are present. These factors led to the choice of a two-stage maximum likelihood estimator joined with correction for sample selection bias (Maddala 1983). This estimator has been derived and is relatively easy to implement using the software package LIMDEP (Maddala and Lee 1976; Maddala 1983; Greene 1988).

Several independent variables are expected to influence complaints, complaint resolution, and subsequent purchase. Hypothesized direction of effects are formed based on economic and consumer behavior theory, and findings of previous researchers. Economic influences of price of the service (PRICE), and family income (FAMINC) are included in equations that estimate number of complaints and subsequent purchases. PRICE is expected to have a positive influence on complaints and a negative influence on subsequent purchase. A more expensive service represents more of a loss to a consumer if there is a problem with it. However, it may be that consumers complain less when prices are higher through rationalizing, "I paid for it therefore I should like it," (Heath et al. 1984). The effect of FAMINC will indicate if complaints and the medical service in question are normal goods.

Employment of a respondent outside the home (HOURS) and the presence of children under the age of six (YNGKIDS) measure time constraints placed on the respondent. Economically, variables are expected to have a negative influence on complaints since market work and presence of young children compete for available time. They are expected to have a positive effect on subsequent purchase since looking elsewhere for a service involves search time.

Whether the medical provider offered some sort of outward customer service (URGE) to attract consumer comments measures a possible softening of constraints by sellers that may influence consumer complaint behavior. This includes patient care representatives in a hospital, for example. URGE should exert a positive influence on complaints (Kendall and Russ 1975). SIZE and URGE expected to exert a positive influence on complaint resolution, since larger companies are more likely to be able to afford customer service personnel and companies that indicate a willingness to please dissatisfied customers are expected to honor it. The effect of URGE on subsequent purchases should be positive. One of the major reasons for offering customer service programs is to retain customers by keeping them satisfied (Fornell and Wernerfelt 1987).

Learning is measured by age of respondent (AGE), and whether or not a respondent completed college (COLL). Persons with a college degree may be better at problem solving, while older consumers may have learned that complaining about medical services is unlikely to bring about desired results. Age is also included in the complaint resolution equation. If a complaint is made by telephone or in person, a seller may be able to ascertain the age of the respondent. The direction of effect of age on complaint resolution will give an indication if older persons are treated differently by sellers than younger persons. Both age and education are included in the subsequent demand equation. If older persons are "more set in their ways" then age should exert a positive influence on subsequent purchase. The effects of education should be negative, as more highly education consumers are better able to sift through alternative sources of medical care.

Attitudes/personality are measured by two factors extracted from 21 different statements using Principal Components Analysis. These two factors are titled BUSINESS, a measure of consumer attitudes toward business, and CONSUMER, a measure of consumer attitudes and actions toward consumerism. BUSINESS expected to impact negatively on complaints because the factor is framed in terms of consumers' perceptions of the unwillingness of business to respond to consumers. CONSUMER is expected to impact positively on complaints as these actions are consistent with positive attitudes toward consumerism.

Three additional variables are included in the analysis: the level of dissatisfaction (DISAT), whether the respondent was female (FEMALE), and whether the respondent resides in a rural area (RURAL). If a consumer is very dissatisfied (DISAT), one might expect complaints to increase, complaint resolution to increase, and subsequent purchases to decrease. Females tend to voice their dissatisfaction to a greater degree than males (Andreasen 1985; Corrigen 1990). Research has found that rural consumers tend to be more satisfied with their buying experiences, and therefore complain less (Leisfeld 1981). They may also have fewer medical providers to choose from.

Results

Results of structural equation estimates are provided in Table 2. Results of the Probit equation, which estimates the probability of making a public complaint is used to correct for sample selection bias. Individual variables having negative effects on the probability of complaining about medical services include level of dissatisfaction (DISAT), presence of young children (YNGKIDS), and perceiving that businesses did not care about consumers (BUSINESS). Increases in the price (PRICE) of the service and increases in the probability that the provider would resolve the complaint (RESOLVE) had significant, positive effects on the probability of complaining.

The number of complaints a respondent made to a seller were positively and significantly influenced by increases in the number of hours worked (HOURS), if the respondent was female (FEMALE), and if the seller appeared receptive to complaints (URGE). Number of complaints are negatively and significantly influenced by having completed a college education (COLL), and perceptions that sellers did not care about consumers (BUSINESS).

Table 2. Structural Parameters

# Variable	Probit	Complaints	Resolve	Buyagain
INTERCEPT	-.033	-.050	4.47***	7.24***
	(1.42)	(3.49)	(1.81)	(2.75)
DISAT	-.939**	.643	-.292	-1.30**
	(.483)	(.840)	(.701)	(.665)
COLL	-.173	-1.83***	-	1.16
	(.391)	(.662)		(.827)
AGE	-.020	-.033	-.103***	-.054
	(.022)	(.062)	(.039)	(.036)
FEMALE	-.300	1.56**	-1.32*	-1.726***
	(.474)	(.833)	(.745)	(.684)
URGE	-.276	1.26*	-.775	-1.34*
	(.446)	(.796)	(.827)	(.884)
SIZE	-	-	-17.26	-
			(18.7)	
YNGKIDS	-.479*	-.091	-	-.170
	(.282)	(.350)		(.447)
OLDKIDS	-.041	-.493	-	-.107
	(.265)	(.492)		(.398)
PRICE	.0006**	-.00001	-.0017	-.00026
	(.0002)	(.00008)	(.0015)	(.0004)
FAMINC	-.000013	-.0003	-	-.00006
	(.000015)	(.00003)		(.00004)
RURAL	-	-	-	-.183
				(.524)
HOURS	.008	.076***	-	-.014
	(.013)	(.020)		(.029)
BUSINESS	-.508**	-.427**	-	-.168
	(.269)	(.225)		(.448)
CONSUMER	-.023	.864	-	-.054
	(.206)	(.722)		(.335)
COMPLAINTS	-	-	.142	-.139
			(.169)	(.349)
RESOLVE	2.34***	1.03	-	-4.62**
	(.746)	(1.40)		(2.12)
LAMBDA	-	1.299*	-	-
		(.787)		
LOG-LIKELIHOOD	-32.79	-	-33.27	-46.61
R^2	-	.92	-	-

* Significant at <.10 level
** Significant at <.05 level
*** Significant at <.01 level

Only two variables were found to be significant in the equation that estimated the probability of complaint resolution. Being older (AGE) and female (FEMALE) were both associated with decreases in the probability of complaint resolution.

The equation used to estimate subsequent demand indicates significant negative effects for increases in the level of dissatisfaction (DISAT), being female (FEMALE), making it easier for a consumer to complain (URGE), and actual resolution of a complaint (RESOLVE).

Discussion

Incorporating the complaint process into a model based on economic theory works as a whole. Looking at economic variables, however, indicates that the complaint process is not driven purely by economic factors. Price appears to be important in getting the process started, i.e. in getting a consumer to make the first complaint, but has little to do with the number of times consumers complain, or whether or not the complaint is resolved. Consumers also do not appear to be risk averse in that the more expensive the service, the less likely they will be to purchase it again. Part of the explanation may have to do with the medical service industry. If a client is dissatisfied with a medical service it may be difficult to ascertain the price of the service in the entire scheme of medical care (nursing care as part of a hospital stay, for example). Itemizing bills to include personnel as well as physical care items might aid consumers in sorting out pecuniary risks associated with medical professionals.

Preference shifting factors which are important include gender and age. It appears that women and older persons are treated differently by the medical service industry. This research confirms that of others which has found that females are more likely to complain. In addition, they are less likely to repurchase a service, regardless of the outcome of the complaint process. Compared to Singh's (1991) results, it appears that females still tend to complain more than males, regardless of the industry. In addition, it appears that females and older consumers may be discriminated against by medical providers in that being female decreases the probability that a complaint will be resolved. Or, it may be that they do not expect that complaints will be resolved, and therefore perceive unsatisfactory resolution, regardless of how a service provider may handle a complaint. This supports other research that found that females believe that complaints in the medical industry are less likely to be resolved than in grocery or auto repair industries and older consumers tend to believe their dissatisfactions will be taken care of (Singh 1991). These findings are unfortunate since women and older persons utilize the health care system to a greater extent than to younger males (Health Insurance Association of America 1990).

Income does not directly influence the complaint process for medical services. Increases in education actually decreases the number of complaints made. Singh (1991) found that these variables tend to be associated with a more sophisticated consumer who realizes that the medical industry, due to its structure, is unlikely to respond to consumer complaints. This is an unfortunate finding and does not support medical consumerism as a way to increase quality and competition in the industry.

Restraints in the model do not appear to be a driving force in the complaint process. Complaints for medical services do not compete with family time or employment, except that once a consumer decides to complain, the more hours worked, the more complaints are made. Perhaps consumers pressed for time rationalize that once the complaint process is begun and time has been invested, it is better to pursue the problem until it is resolved.

It was expected that if consumers felt that businesses were "out only to make a buck", and "did not care about the consumer," that consumers would be less likely to complain, in part because they felt their complaint would not be resolved. Indeed, if consumers perceive that sellers will be likely to resolve their complaint (RESOLVE), consumers are more likely to complain. These personality/attitude variables, however, do not affect switching behavior, not boding well for medical consumerism as a method for instituting industry change.

The learning model appears to have the most impact on the complaint process. The overriding message to sellers from the results is that medical providers should "get it right the first time" or risk losing clients. When a consumer is very dissatisfied, they appear to be less likely to repurchase from the same service provider EVEN IF THEIR COMPLAINT WAS RESOLVED or the seller offered some kind of customer service program. If consumers believe their complaint will be resolved, they will complain, but they won't purchase the service again. And, providing customer service encourages consumers to complain and may increase expectations about resolution. Increased expectations may disappoint some consumers, making them less likely to repurchase the service again. Thus, consumers tend to "learn" that when they are dissatisfied, they might be better off trying a new medical provider even if their complaint was resolved. This finding doesn't bode well for what has been called "defensive marketing strategy" (Fornell and Wernerfelt 1987).

Conclusions

What can be gleaned from the above discussion? Unfortunately, most of the news is not encouraging. The consumer oriented practice of complaining as a form of consumerism is not likely to have the effect of increasing the quality of medical care. Even though females tend to complain more, their complaints are resolved less often. Those with higher educations, who might be better able to deal with service providers, actually complain less. Older consumers, who have an average more physician visits than younger consumers (Health Insurance Association of America 1990);, are less likely to have complaints resolved. Perhaps older consumers could be educated in "the art of complaining." However, given the current results on complaint resolution, it appears their complaints won't be dealt with satisfactorily.

The glimmer of good news is for increases in competition in the medical industry. Consumers do appear to be more likely to switch medical care providers when dissatisfied, even if their complaints are resolved. Switching, however, places real costs on the consumer. Not only are there increases time costs associated with "doctor shopping," for which little information is available, there are also pecuniary costs in that consumers must pay for medical services a second time if quality is not up to par the first time.

What this indicates is that medical consumerism may not be able to help the plight of the medical industry. In other words, perhaps society and policy makers as a group should think twice about placing the burden of improving medical care on the consumer. This points to the need for market oriented controls, some of which include incentives for increasing competition, price regulation, and increasing the availability of new services (White-Means 1989). It appears that until the structure of the industry is changed to accommodate consumer voice, consumer oriented policies often fall on deaf ears.

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Consumer Decision Making in a Global Context

Linda A. Lusby
Acadia University, Wolfville, N.S.[1]

Traditional models of consumer decision making plot the decision to be made against personal and family needs and resources. While most acknowledge the influence and impact of larger societal systems on the thought processes of the decision makers, few consider the relationship in the reverse. Consumer decisions made by individual consuming units - be they individuals, families, groups, institutions, or the corporate and business sectors - have a tremendous impact on the political, social, environmental, and economic health of the world in which we live. Decisions made in a framework which encourages the decision maker to recognize the interactions and interdependence of the world's systems would be more responsible and more in keeping with the new world ethics being discussed in the 1990's.

Recent world affairs, public events, environmental disasters, marketing trends and publications have done much to raise public awareness about problems in today's world. Consumers in general have a higher level of consciousness of global concerns but, for the most part, have little knowledge about what they can do to make a difference. Much attention has been given to the "4 R's" of the environmental or green movement and to boycotts of multinational companies with allegedly unfair marketing, social, or environmental practices. However, little has been done in terms of concrete measures to enhance consumer decision making and to educate consumers about the alternatives available in the marketplace and the consequences of their choice.

The work described in this workshop session uses the current environmental and global crises as the underlying rationale for the development of a model for a global approach to consumer decision making and consumer education. The concept of consumer ethics in introduced and discussed and the consumer decision making process is placed within an ecosystem perspective of the marketplace.

The model developed introduces educators, marketers, and consumers to a more global perspective from which to consider consumer decisions. This model has as its starting point the commodity, product, or service under consideration and the questions emanating from it raise such issues as the environmental, social, political, economic, and health related factors which hang on the product's (etc.) production, distribution, use, and disposal. The model also encourages the user to consider both the local or domestic and the global ramifications of the selection of the product or service.

The use of such a model necessitates a shift in some educational philosophies: consumers must be provided with different types of information, be encouraged to critically analyze situations before them, and to reassess their own values and priorities in a global context. The traditional microscopic or personal focus must be rationalized within the expanded macroscopic or global focus in the consumer decision making process. Above all, the consumer decision must be seen as part of a personal and societal system in which all parts are related.

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[1] Assistant Professor, Consumer Studies
Faculty of Pure and Applied Science

Examining the Influence of Values and Lifestyles on Environmental Decisions

Marlene S. Stum, University of Minnesota[1]

The focus in this paper is on consumer values and lifestyles as one part of the creation of and solutions to the complex solid waste management problem. Research-based knowledge of effective methods to change consumer environmental behavior is provided. Eco-consciousness, lifestyle flexibility, and intrinsic motivation are the focus of educational programs designed to achieve long term changes in consumer behavior.

Solid waste management is a complex issue facing individuals, local communities, and our larger society. Policymakers and waste educators have focused most of their attention and resources on developing markets for recycled products, teaching households the "how to's" of recycling or composting, developing waste disposal technology, and siting landfills. In comparison, the roles that values, consumer decisionmaking and lifestyles play in reducing solid waste problems have largely been ignored. Research-based knowledge of effective methods to change the waste management behavior of households is even more limited.

Perhaps never before have so many consumer lifestyles and behaviors needed to change in so short a time, and stay changed, if the environment is to be protected for current and future generations. Consumer educators can contribute an understanding of the impact of lifestyles on the generation of waste, and long term changes in consumer behavior to the multi-disciplinary issue of solid waste.

Lifestyles and Environmental Behavior

Lifestyles are an expression of our values, beliefs, and attitudes demonstrated through the purchase and allocation of human and non-human resources (Knutson, 1983). Solid waste disposal issues are reminders that our lifestyles, our chosen patterns of behavior, are testing the earth's capacity. Consumers make dozens of lifestyle decisions everyday which affect the solid waste stream, the larger environment, and the quality of life of current and future generations. Many consumers are raising the question of "how can we choose lifestyles which allow us to realize our full human potential and preserve the environment at the same time?" (Devall, 1988).

Existing research on long-term consumer behavior change, especially conservation and environmental behavior, suggests that intentions to change and actual behavior depend upon a variety of influences (Cook & Berrenger, 1981; DeYoung, 1984; Fishbein and Ajzen, 1975; Neimeyer, 1990). Household environmental behavior appears to be a function of resource constraints, predisposing attitudes and beliefs, macro environmental factors, and knowledge and experience. Research consistently suggests that the three most influential change factors are predisposing attitudes and beliefs, specifically: 1) lifestyle flexibility (perceived costs and benefits and change); 2) eco-consciousness (perceived interrelationships of self and environment); and 3) the type of motivation (intrinsic/extrinsic).

Individuals who have greater lifestyle flexibility and eco-consciousness are more likely to make long-term changes in their lifestyles to preserve the environment while striving to maximize their quality of life (Neimeyer, 1990; Wilhelm, Keith, & Gladhart, 1983; Knutson, 1983). Research studies indicate that we tend to consistently underestimate the role of intrinsic motivation as an incentive to change behavior and overestimate the role of extrinsic motivation (Wilk & Wilhite, 1983; DeYoung, 1984). Extrinsic motivation includes rewarding changed conservation behaviors with money, social approval, or compliance with local policies. In comparison, intrinsic motivation relies on individuals' changing lifestyle behavior because it is viewed as worthwhile for its own sake, or the right thing to do. Intrinsically motivating consumers to rethink their lifestyles and their impact on solid waste issues requires deeper perceptual changes in values and attitudes, and these changes can be encouraged through education.

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[1] Assistant Professor, Family Social Science

Implications for Educational Program Development

First, educators can encourage consumers and policymakers to become more aware of their own beliefs and influences on their environmental behavior. A questionnaire designed specifically to measure the following concepts is also a useful educational tool: belief in solid waste management problem (causes and solutions); eco-consciousness; lifestyle flexibility; motivation for change; and knowledge and experience. Results for individuals and groups can be presented and discussed in relationship to previous research findings regarding influences on consumer behavior.

In addition, research on consumer environmental behavior indicates that key components of an educational program designed to affect long-term behavior changes would address values and attitudes regarding lifestyle flexibility and eco-consciousness as well as intrinsic motivations to adapt an ecology-conscious lifestyle. The following curriculum and programming ideas can be adapted for a variety of age groups. Individual consumers as well as public decision makers, solid waste officers, and other professionals involved in solid waste issues should be considered as potential target audiences.

Increase levels of eco-consciousness. If the interdependence between households and the environment is not understood or chosen to be ignored, consumers are not likely to be intrinsically motivated to rethink the impact of their household system on the larger environment. In an ecosystem, resources that originate with the natural environment are returned to the environment. Are we returning the output from our lifestyles to the environment at a rate and in a form that can be readily assimilated? Recognition that our lifestyles have implications beyond our own household system is an important beginning concept for consumers to understand.

Individuals can become more aware of the environmental impact of lifestyle decisions on the larger environment through an analysis of their own household ecosystem: 1) what is brought in (inputs); 2) how resources are utilized (actions), and 3) what results in used resources and satisfaction (outputs). An ecosystem approach goes beyond the typical focus on system outputs (waste disposal or recycling), and recognizes the potential impact of inputs (source reduction) and actions (reuse, changes in habits). Case studies can be developed to help illustrate how changes in inputs, actions, and outputs might be different for diverse household systems. For example, a family with two children under three years of age might make different choices than a childless couple if both were forced to reduce household waste by 25 percent. Assumptions regarding values, attitudes, and the impact of waste reduction on the quality of life can be discussed.

Analyze Eco-Consciousness and Lifestyle Flexibility in Consumption Decisions. Educators can use products intentionally selected to represent different consumer values and lifestyles to stimulate group discussion. Each group should receive at least 2 products from the following categories: 1) newly introduced products with excellent sales records; and 2) environmentally friendly products representing various shades of "green." Products in the first category are selected to represent what business and industry market research as well as consumer consumption patterns suggest are important to today's consumers. One source of such product examples is Marketing News which publishes the American Marketing Association top ten products of the year. Products in the second category are selected because they reflect characteristics which suggest that they are more environmentally sound. Such characteristics could include: 1) made from and/or packaged in recyclable materials; 2) not excessively packaged or wrapped; 3) sold in reusable containers or products for which refills are available; 4) not disproportionate users of energy or other resources in manufacturing, use or disposal and; 5) not dangerous to the health of people or animals.

Educators can buy products to enable participants to actually examine, or describe each product with a picture on a card. Educators could ask participants to discuss the following questions: 1) What is your impression of the lifestyle of a person who would buy such a product? 2) What do you think is important to a person buying such a product? What are their values and beliefs? 3) If money were no object, would you buy this product? Why or why not? and 4) Which of these products are most people you know most likely to purchase? Why? This small group exercise helps raise questions regarding resource tradeoffs, lifestyle flexibility, and influences on consumption decisions.

Examine lifestyle flexibility and the role of values. Educational programs can also be developed which help consumers to examine and discuss which activities they are willing or unwilling to incorporate into their lifestyle and the reasons for such decisions. For example, one activity lists specific options for reducing, reusing, or recycling from simple to complex such as: 1) pay to have bagged yard waste picked up by trash hauler; 2) take bagged yard waste to a community composting site; 3) leave grass clippings on the lawn and start a backyard compost site and; 4) illegally dump yard waste in a local dumpster. Discussion questions can focus on why an option was or was not chosen and how such choices might differ among members of the same household, or among different households. Participants could be encouraged to discuss: a) the tradeoffs in human and non-human resources involved in lifestyle decisions, and b) why some households are more likely to be flexible in household inputs, actions, or outputs.

Educators could also develop activities to increase awareness of the relationship between personal value systems and environmental actions as well as individuals' willingness to change their lifestyles. Consumers could rank values such as convenience, frugality, efficiency, quality, participation in social causes, freedom of choice, materialism and others from most to least important. Consumers could also discuss ways more eco-conscious household inputs, actions, or outputs might challenge an individual's most important values. Lifestyle decisions relating to feminine products and diapers are excellent topics for such a discussion. For example, discussion could focus on how existing value systems are challenged by suggestions such as: a) women should be required to give up tampons and use washable cotton pads as a feminine product alternative, or b) communities should ban all disposable diapers from being sold. Additional examples of potential lifestyle changes can be tailored for the age group of learners.

Consumer educators face the challenge of creating educational programming which helps consumers develop intrinsic motivation to lead more eco-conscious and flexible lifestyles. The educational development ideas presented in this paper offer a place to begin to recognize and integrate the role of values and lifestyles as part of solid waste problems and solutions. Such a complex issue will require multi-disciplinary approaches and integration.

NOTE: Educational resouces described above can be obtained from the author.

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Educating and Motivating Consumers to Manage Household Waste

Cathy F. Bowen, The Pennsylvania State University[1]

Managing municipal solid waste is a problem across the United States that is receiving an increasing amount of attention. The USDA Extension Service included waste management among its national initiatives that guide educational programs. In July of 1988, Pennsylvania lawmakers passed Act 101, The Municipal Waste Planning, Recycling and Waste Reduction Act. This law changed the way many consumers handle their household waste. The two programs described below were developed to meet the educational needs of the Commonwealth's citizens.

Stashing Your Trash... Where Does Your Garbage Go?

Stashing Your Trash... Where Does Your Garbage Go? is designed to educate consumers about managing nonhazardous household waste. Objectives of the program are to:
1) Provide consumers with a brief overview of the solid waste situation in Pennsylvania.
2) Provide consumers with strategies they can use to manage household waste and to help reduce the costs associated with waste.

Components of the program include:
1) A teaching outline with suggested resources that can be used to address a topic.
2) An audio tape of the teaching outline that can be played while doing routine activities, driving, or riding in a motor vehicle.
3) Transparency masters.
4) A slide, tape, and script that addresses the need for recycling and other waste reduction behaviors.
5) Supporting slides that can be used instead of the transparencies.
6) Handouts and fact sheets with information and tips for consumers.
7) Slides that illustrate the amount of garbage each person and a family of four make during different time periods (day, week, month, and year).
8) Aids to help users implement the program in their local community (e.g., sample program announcements for radio or newspapers, registration forms).
9) References and other sources for additional background information.

Transparencies, handouts, and program evaluation forms are also on computer disk. Since each county extension office in Pennsylvania has the same type of computer (Macintosh) and work processing program (Microsoft Word), transparencies and other disk resources can be tailored for audiences.

Agent Inservice Education

The inservice education for county extension agents who deliver this program includes an on-site visit to a processing facility for recyclable materials and a transfer station. A transfer station is a facility where garbage haulers take community waste. At the transfer station, waste is weighed and compacted into large trucks before being taken to a nearby landfill.

Hazardous Products in the Home

This program helps consumers recognize the hazardous nature of common household products and encourages them to manage (use, store, and dispose) hazardous products safely. Preventing water pollution and health problems are emphasized in this program.

This program contains the same components as those described in Stashing Your Trash...Where Does Your Garbage Go? In addition, a 10 item computer generated quiz was developed for use with educational displays that support this program. The quiz contains questions about proper disposal of common hazardous products and demographic questions. Prior experience with computers is not necessary to complete the quiz. Graphics appear on the screen with each disposal question and users get an automatically generated copy of their responses and the best answers to the disposal questions. In addition, users' answers to the questions are automatically stored on the computer disk and can be retrieved later for analysis. The program was developed using Hypercard, and application for Apple Macintosh computers.

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[1] Assistant Professor, Agricultural & Extension Education

Educational Displays

Educational displays play an important role in supporting information delivery of the above programs. The Waste Wall, an 8x8 wall of garbage supports Stashing Your Trash. It is used at statewide and local events. A four-sided rotating display (*Chemicals in the Home*) and a folding table top display (*Manage Hazardous Products Safely*) supplement Hazardous Products in the Home. The rotating display focuses on characteristics of hazardous products and is useful in getting audiences to recognize that many household products are hazardous. *Manage Hazardous Products Safely* raises consumers' awareness about proper use, storage and disposal of hazardous products.

Research Findings and Hypotheses for Future Studies of Occasional (Secondhand) markets in Consumer Products

Lee Richardson, University of Baltimore, Maryland[1]

Markets for secondhand consumer goods offer an area of research opportunities to enhance both economic efficiency and environmental improvement. Exploratory research surveys of consumers as sellers and buyers indicate a rich variety of markets, behavior patterns, products, and non-market exchanges affecting secondhand goods.

Introduction

The focus of the analysis of consumers in many disciplines essentially is limited to the activities related to the acquisition and use of products and services. The emphasis is on those products produced and marketed new for ultimate consumers. The worthiness of new newly purchased consumer goods is the focus of economics, marketing and other disciplines.

The use and disposal of goods has arisen as a concern because of environmental costs and problems, particularly solid waste disposal. Many factors affect the solid waste flow including quantities of goods produces and sold, the nature of the use (is it used up, transformed, disposed, unchanged, etc.), and the life of use and storage by consumers. Aside from the business, industrial, productive, supply side of the economy, the ultimate consumers use, storage, and disposal of products then should receive some focus in order to determine the factors influencing their contributions to the solid waste flow.

The economics of the consumer behavior and other factors influencing consumer use and disposal of goods deserves attention from the point of view not only of the environment, but in order to enhance the value of products to consumers.

The extreme case of a product that is entirely used up by ultimate consumers and thus does not reenter the economy in a physical sense might include real estate, landscape products, or items transformed by burning or digestion. On the other extreme are old computers and newspapers sent to the solid waste disposal facility (dump).

Within this oversimplified scenario of possibilities are secondary markets for consumer goods. Secondary markets for goods could extend their useful lives, reduce the amounts of resources needed to make new goods, and reduce the solid waste stream both by using up goods and delaying their entry into the solid waste stream. These markets and their transactions would produce real wealth in the sense that goods would be redistributed to consumers who would obtain more utility from them than would the original buyers and users of those goods as new goods. Whether measures of the economy are appropriate to reflect this real value is not of concern here.

Secondary Market Institutions

It is useful to consider market and non-market exchanges of consumer goods in order to more fully appreciate the nature of such markets. Many goods are transformed is use and may be sorted and disassembled as well as physically consumed. A vast range of exchanges is possible and exists in many current examples. These goods are exchanged among consumers in almost unnoticed ways in everyday life. Food is purchased, reassembled cooked, and served to others. We loan out pocketknives, handkerchiefs, and pencils to each other within household and among associates for long and short, major and minor, uses. These are gifts of major cultural significance and those, inconsequential. Many human interactions involve transfers of ownership or limited loans of use of goods.

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[1] Professor, Marketing Department

Markets exist where there is some exchange for value and it may be for money or bartered goods and services. Precise economic definitions might obscure the range of possibilities in such market-like exchanges. There may be room here to have raging debates about the nature of the markets between spouses, children and parents, friends, coworkers, etc. The essential observation though is that the variety of relationships is richly complex and that market is not the driving concept.

Since consumers do not, we assert here, primarily think in terms of market transactions in their post-purchase (after buying or obtaining goods new from the market) phase of product consumption, secondary market transactions almost defy definition in the market for consumer goods. If there was a better understanding of the exchanges and the consumer perceptions of those exchanges, perhaps a demarcation of market and non-market exchange would be possible.

Research Focus

The U.S. consumer secondary markets are fractionalized and specific to circumstances affecting people, goods, and circumstances. Among the useful ways of dividing the market are by product category and by permanence of the market activities. The degree of development of secondary markets in single product categories mentioned above is widely varied. The gathering and redistribution of goods in markets and non-markets deserves a good deal more documentation so that promising research opportunities are discovered and initiated for both purposes of understanding them as well as to explore ways of stimulating or changing them. The permanence of market activities is a little considered subject in retailing and distribution in the U.S. The question of permanence would not be interesting unless the secondhand consumer goods markets were - as is the case - so fluid and undeveloped. The markets lacking such permanence - generally referred to as occasional markets - are the primary, not exclusive focus of the research. The common terminology for some of these occasional markets are flea markets and yard sales (a.k.a. tag sales, garage sales, neighborhood sales, moving sales, etc.). Many other private transactions occur among friends and strangers as well. Some of these are quite informal with no traditional marketing activities and others result from buyers and sellers seeking each other. Some occur with the assistance of advertising (classified, especially) or by the regular known location of a buyer or seller as a sort of logistical focal point. Some of the activity is at irregular fairs and similar occasions. An unspecifiable fractions of it is illegal or otherwise underground to avoid licensing or taxes, etc. In this scenario of many remaining questions to be explored in the future, the research concentrates on general merchandise sales of the occasional sort. It is frankly an arbitrary starting point for the research effort that may follow in the full array of secondary markets for consumer goods in the U.S. The primary participants - and the focus of the surveys - on both sides of the transactions are ultimate consumers, though technically when they are sellers they would be classified for purposes of the transaction as sellers.

Research Methodology

Exploratory research was conducted in four phases from June, 1990 to December, 1991, in order to identify a range of opinions, attitudes and behaviors of consumers involved in secondary consumer markets (buyers and sellers). The phases were as follows:

1. June, 1990. Interviews of sellers including some merchants not primarily acting as consumers selected from general criteria and interviewed on a convenience basis by graduate students as a class requirement. This phase identified a mix of reasons for certain marketing practices including a number of questions designed to elicit these persons' concepts about customer behavior.

2. October 1990. Interviews of persons who had made a purchase at a "yard or garage" sale since July, 1990. These questions were in part the result of what Phase 1 results had suggested about consumer behavior, but also included some questions designed to evaluate sellers that were not suggested by sellers in Phase 1.

Interviews were obtained at the convenience of graduate students working for class credit.

3. June, 1991. Interviews of persons who had made a purchase at a "yard sale or garage sale in 1991" were conducted as in Phase 2. The particular questions chosen for this phase were based on results in Phase 2 in part and included detailed measures of opinions about the characteristics of seller operations as well as concepts of buyers (but not directly about themselves). Results of this phase showed much evidence that such occasional sales involve strong social and cultural factors or at least participants report such perceptions.

4. November, 1991. Interviews conducted similarly to the previous three phases, but designed to elicit behavioral and opinion results about all types of secondhand and used consumer goods. A large portion of the responses concerned gifts of secondhand items.

The four phases to date are exploratory in nature primarily because the nature of the secondary markets for consumer goods is so little documented in the literature. it would be unwise to assign quantitative measures to the results because the methodology was heavily influenced by whatever convenience criteria were used to select respondents by a select group of interviewers.

Summary of Results: Phase 1

Respondents were all kinds of sellers.

The nature and size of activities included yard sales that lasted a few hours and were generally at or near residences of the sellers. Self-described flea markets were often regularly occurring, but were also one time events for which many consumers congregated to sell items. Some flea markets were charity events for which merchandise was donated and others for charities included individual sellers selling for their own accounts, but paying a fee for the right to participate. A variety of second hand goods stores, including antique stores, were identified. Some were permanent businesses, some were operated by charities. A select number of entrepreneur were found to be engaged in occasional or part time buying and selling of items ranging from collectibles to large items such as boats.

Most yard sales had a variety of household merchandise. Some were described as specializing in a few lines such as books or baby items. Flea markets were larger and the merchandise selections were overall very broad. Notably, there were no specialty flea markets such as for antiques or garden items as are known to exist elsewhere. Likewise no fairs or hobbyist events were reported. The stores tended to have specialties (antiques, collectibles, clothes, etc.) rather than to be self-described as generalists in all sorts of merchandise. A few stores reported value-added operations such as fixing broken items, deliveries, refinishing, etc. Stores reported selling some new merchandise either donated by merchants or unspecified as to source.

The reasons for selecting items for sale varied from business reasons or market-derived reasons to the motives and purposes of the sellers. Yard sale merchandise was selected for sale often to get rid of it. Stores were market driven. Charity stores took what they were given. Businesses and charities with retail locations often reported special situations where they took advantage of social opportunities such as donated vehicles, office equipment, or distress merchandise lots and tried to capitalize on the situation.

Locations for sellers were influenced by a number of factors. These included convenience for yard sales (their name suggests it). Rents were important for some - they often had very low price locations in old and decrepit facilities. Retail location criteria were mentioned in the normal range of such criteria (parking, traffic flow, nearby to other stores, correct facility type and size, etc. Small stores that had been in operation for some time reported relocating as near as they could to their previous locations.

Promotion strategies for yard sales ranged from none (other than being visible) to the use of signs (one or many with the purpose being to give directions) to advertising (notices or using classified advertising). Flea markets relied on work of mouth more and tried to maintain regular hours and locations usually on a weekly basis.

Stores relied more on advertising, but used many particular media and techniques.

Prices were determined in varied ways, often in ways outside of marketing textbooks' usual recommendations. Hunch was cited. Mystical terms such as "value" were invoked. Some yard sales were priced arbitrarily by whoever had the responsibility for putting on the sticker or by whomever the buyers asked)when there was no marked price). The yard sale operators used no marked prices in some instances. Negotiable pricing was common in yard sales, including increased discounting as the sale proceeded through its few hours of life. Some stores and sales group items such as clothing or books and sold all at the same price in the product group (all paperbacks for 50 cents, etc.). Yard sales reported little sense of market price levels as baselines for their pricing.

Prices at flea markets were designed sometimes to maximize revenue in some way, but often prices were aimed at clearing out the stock by the end of the day. Flea markets also left pricing to individual sellers to determine. Charities most often reported clearing out the stock (because otherwise it would have to be hauled off and disposed - thus it had a negative value at the end of the flea market sale day).

Stores reported more traditional pricing methods including references to cost based pricing, the use of reference books (antiques and collectibles), pricing at the markets, etc., but they also reported the use of their experience as a rather ill-defined method.

When asked for their opinions as to their customers motives or reasons for shopping with them, yard sale operators states an interesting mix of perceptions. They reported customers were inclined to stop because they were out driving, were in the area, or that they were curious. Some stated that shoppers were bargain hunters or price-oriented. Several indicated that shoppers were loyal customers at their repeated yard sales. Some described customers as young mothers or senior citizens and proffered that as evidence of motives.

Flea markets attracted diverse crowds, but also cited collectors or people who want to be supportive (of charity flea markets). Customers were described as browsers and as persons curious about the motives of the sellers. Flea markets attract low income and/or regular customers, operators reported. Stores reported instances of serving a primarily low income local population,specialized collectors, and other dealers in similar merchandise. Specialized stores sometimes have a limited, very regular, and well understood clientele with specific and narrow interests. Some antique and collectible stores serve designers and decorators.

When asked what it takes to succeed as a seller (a catch all question), new factors were raised by respondents. Flea markets and yard sales depend, it is believed, on weather, location, and publicity or ads. Flea markets require consistent attractive sellers to build the business. Stores cit location, their ability to obtain attractive merchandise, and their ability to develop a loyal following. Specialist line stores rely in part on their ability to repair and restore items, their reputations as fair-dealing merchants, and their personal qualities in working with clients. Stores of these specialized types must become expert in their products and know market trends intimately, they sometimes said. More general merchandisers cited low prices and location near low income people.

When asked about special problems, yard sale and flea markets cited clean up and returning or junking remainder items. Weather disasters were cited as big risks. Stores cited severe impatience with non-buying and curious browsers. They cited collector customers who were unrealistic about prices, especially when they were rising sharply. General merchandisers have difficulties with incompetent or unreliable employees and volunteer workers as well as exasperation with the over supplies of some types of items. Poor quality merchandise donations were mentioned by charities.

Pushed to think of anything else they wanted to mention, yard sale operators mentioned the difficulty of selling large items such as cars, the hassle and distasteful aspects of haggling and price negotiations, and how they were insulted by the attitudes of people toward their offerings (one's treasure is another's trash). They regretted not pricing individual items when the rush of customers came. They were irritated by early morning shoppers who came before opening time. Flea market operators mentioned the need for cooperative efforts with sellers. Charity flea markets expect volunteered efforts to operate, prepare and close the market and a sense of charitable purpose.

General Conclusions about Sellers

Phase 1 was the only part of the research to date that explored marketers/sellers. The retailers had no unusual or unexpected problems although their businesses differ in respect to their "used" merchandise. Flea markets and, especially, yard sales on the other hand, were unique selling operations with a range of problems rarely seen in established forms of retailing. These sellers appear motivated by non-conventional reasons as well. They conduct their operations in such different ways from regular retailers that standard marketing analyses of their operations may fail to appreciate their nature as well as to provide strategy recommendations that can be successfully adopted. With the caveat that the measures of these retailers' behaviors are known only as to their range in part and not as to the frequency that they occur, these hypothesis for further research are proposed:

1. Occasional market operators in secondhand consumer goods enter the market for nonbusiness or non-economic reasons.

2. Occasional market operators understand the behavior of their customers.

3. Occasional market operators choose appropriate business strategies to achieve their goals.

As the purpose of this research is in part to develop new and expanded secondary markets, the hypotheses above do not directly lend themselves, proven or disproved, to this purpose. It may well be that research into the existing market may never do so. Current markets may be only atrophied versions of what might be developed with the application of better strategies that are yet to be tried in yard sales and flea markets. Revolutionary changes could come about, for example, if sellers simply applied better methods in their sales practices. We can not offer proof from this research of any better methods, however.

Summary of Results: Phases 2, 3, 4

Following upon the results of the study of sellers, the subsequent parts of the research focused on the customers. Implicit in this shift to buyers is the philosophy that a better understanding of customers would be a basic beginning point for revising and improving seller performance. Also, buyers may provide insights about sellers that would go beyond what sellers, who are very unsophisticated marketers in the conventional sense, may have learned on their own.

These phases of the research are focused on occasional markets, particularly yard sales. Combined findings are reported from the three subsequent surveys.

Product purchases from yard sales varied in many respects, but certain characteristics of the hundreds of mentions can be seen much more frequently than others. Consumers tend to use specific generic descriptions of purchases (books, chairs, luggage, etc.) rather than brand names, but on occasion specify brands (Fisher-Price, Avon, Tupperware), an indication presumably of the additional satisfaction gained from obtaining the brand. While many goods are durables, collectibles, old (antique is not the term of consumers) things of all sorts, decorative household items, and toys were frequently mentioned as actual purchases, bias may be introduced by using recall interviews where the more significant items are remembered. Nonetheless, some individuals purchased plants, clothes, toiletries, kitchen utensils, and personal products in quite some variety.

Product assortment was the most fervently criticized aspect of yard sales. People said they did not like a lot of junk, limited variety, broken items, bad looking items, "crummy" things, small things, plastics, new (as in being sold by a merchant through a yard sale) products, cloths, clothes, ceramics, "just dug up" items, battered goods, and worthless (expletive). By far the product complaints relate to quality and responses reflect often on the character or credibility of such sellers.

The place which sales were held received much criticism. Bad neighborhoods were cited, crowded conditions and slow service related to it was noted. Bad layout including lack of displays, items dumped in boxes, prices not on goods displayed, and clutter were complaints. The parking was sometimes inadequate or unsafe. Tall grass, poor appearance from the car, and weather protection bothered some, A number of people did not like the other shoppers who they criticized as greedy, rude, pushy, and seedy among other descriptions. A number of shoppers would like to see large sales, groups of sellers together, neighborhood events, or even though they did not say so, they may prefer fairs and flea markets over individual yard sale sites.

Price is important to buyers as expected, perhaps an aspect of such sales that does not need to be mentioned. Many complaints about prices being high or high considering the value may be based on knowledgeable buyers understanding of prevailing market prices for yard sales or could be based on some arbitrary standard of the bargain that shoppers expected. Negotiable pricing was not cited often as a desirable aspect of pricing (or undesirable). Lack of any price on items was a frequent complaint. Implicit in some doubts cast upon the integrity of sellers was that they might cheat you on price ("hustlers," a regular business, "racket") certainly on the faulty items that were being offered.

Promotion, information, advertising, etc., were not mentioned often as significant factors in decisions to shop and buy at yard sales. The yard sale that offered no information on the other hand is likely to be the one that wasn't visited. Deceptive advertising (a small sale, nothing left, nothing but junk, no items sought were there, etc.) was a frequent complaint. The sale location is a major aspect of consumer information and many individuals make judgements at the site as to whether to stop. They clearly do not like the trouble involved in stopping and finding little of value. Persons responding to signs and advertising and thus making some effort to get to the site still appear to judge what they see at the sight before shopping. Impulse shopping based on the appearance of the site is often important.

When asked to give advice to proprietors on how to please them as buyers, buyers frequently cited signs and advertising. They wanted advance notice and information at the site or in other ways. They wanted detailed information on products in advance. Thus while past experiences at yard sales were not perceived as affected by promotion and advertising, buyers appear to be suggesting they would be happy to shop where they had information that the sale matched their interests.

Perhaps unexpectedly, the volunteered comments, good and bad, about the proprietors of yard sales were frequent and quite important to the buyers. Apparently, people expect yard sales to be operated by a certain kind of proprietor. When sellers are friendly, cooperative, run a clean and honest operation, are considerate, answer questions, are not merchants, do the selling only on occasion (implying this would be for some "right" reasons such as cleaning out the attic), aren't mean, etc. the buyers are more satisfied. Many complaints were made about proprietors as individuals as well as about the way they conducted the sales. They don't want to be "intimidated" or to receive a "hard sell". When asked generally what influences them to stop at yard sales, certain other reasons emerge besides the marketing factors and the character of the sellers. Many cite getting further discounts off marked prices (perhaps from haggling or from panicked sellers). Some like looking and finding significant bargains (a reason for stopping at any sale), fun, curiosity, meeting people, unique products, and an exhilaration in taking a chance on finding something terrific.

In a question designed to measure the intensity of people's agreements with certain statements about many of the topics above, those that received several citations declaring them to be always true were:

1. "I offer less than the asking price"
2. "Buyers are intimidated in finding a deal or bargain they can brag about"
3. "I have not found unexpected defects in items I have bought"
4. "Buyers buy things they really do not need"
5. "Buyers are interested in negotiating the price"
6. "I have not found out later that I paid too much for items"

On the contrary, there were many statements that several buyers said were never true.

1. "There ought to be legal restrictions on the way yard sales are conducted"
2. "I buy from people who look like they could use the money"
3. "I buy something at each sale"
4. "Buyers are poor or needy"
5. "Sellers would take something back if it was defective"
6. "Sellers are uninformed about their products"
7. "Sellers are pushy and sell too aggressively"
8. "I learn about people and neighborhoods in my stops at yard sales"

Of the 25 statements tested, only these received two or more strongest mentions from the 47 respondents whose results were usable. Note that no statement appears on both lists. While these are the strongly stated views of a small number of individuals, little of this information allows identification of groups within the sample (i.e. market segments) who had certain characteristics as groups notably different from others in the sample. These groupings may exist, of course, and their existence would be important in developing strategies to increase yard sale markets and to assist yard sale operators in improving their success levels in attracting customers.

When consumers are asked questions about second hand items overall with no mention at all in the survey as to the source of the product (market or non-market), the types of goods obtained are overlapping with the responses in the yard sale questions. There are many similar points raised about value, price, quality, etc. as well as similar concerns about sellers expressed about sellers when the items are purchased. The particular sample used in the survey cited many non-market sources and among market sources, occasional sales of the yard sale variety were mentioned very little. Again the convenience sampling invalidates quantitative results for the most part.

Of 121 usable surveys when the question was asked about the types of goods "that are now yours," but were "once owned by someone else," the following categories (liberally defined) received at least ten mentions.

1. clothes
2. jewelry, including wedding rings
3. books
4. furniture (most frequently mentioned, 67 times)
5. records, tapes, recordings
6. plants
7. childrens clothes (parents consider they "own" them apparently)
8. autos
9. pets
10. real estate (gifts and purchases)
11. office furniture, equipment
12. TV, radios, stereo, VCR
13. sporting equipment
14. china, silver, serving pieces
15. kitchen appliances (major and minor).
16. guns
17. recreational vehicle (motorcycle, boat, RV trailer)
18. various collections (stamp, coin, doll, etc.)

Curiously, few mentions were made of garden equipment, bicycles, tools, pictures and bric a brac for decorating, religious artifacts or books, and games. This may simply reflect the urban sample of graduate students. A majority of these product groups were significant to yard sales as well. Certain qualitative differences within the 18 groups above are obviously different when comparing yard sales to second hand goods generally. Very expensive items were cited as gifts or heirlooms more than from yard sales. Products were sometimes described as being from someone in particular (mother, a friend, husband, etc). Absolutely no real estate, recreational vehicles, or autos were obtained from yard sales.

In identifying objects as second hand, there is certainly some traditional cultural attachment to the usual categories and some that do not appear at all. Gifts of food are certainly frequent, but they are not stored long or at all (cooked and served food). When a home is inherited, the recipient may not identify all the furnishings and landscape material, much less the laundry equipment and kitchen supplies. A gift of chewing gum or a pencil is not noteworthy. Gifts of money or securities, life insurance benefits, pensions, or the care of an adopting grandparent are not likely to be revealed or thought relevant to a survey about secondhand goods. They were asked, "How were they obtained?", the major mentions were (liberally grouped):

1. Parent
2. Spouse
3. Child (very few mentions, a reflection of the perception of gifts in all likelihood)
4. In-laws
5. Grandparents
6. Other relatives specified (Sister, Uncle)
7. Retail stores not specified
8. Individuals
9. Friends or work associates (no mention or employer)
10. Flea market
11. Yard sale
12. Family not specified
13. Antique store
14. Bought from stranger as in advertising or a notice posted.
15. Bought from car dealer
16. Realtor, home owner
17. Found as in lost
18. Stolen - one mention only, but clearly a category. Gambling was also one mention.
19. Auction
20. From a retail store, but one which normally sold new things
21. Inherited - unspecified
22. Puppy or kitten litter of someone
23. Consignment store - limited mention because buyer may not be aware of consignment process
24. Neighbor
25. Salvation Army (only thrift store mentioned)
26. Former spouse of current spouse (as in wife #1) - a gift (one Instance)
27. Library sale
28. Heirloom for more than one generation
29. Boyfriend - one mention (no girlfriends mentioned)
30. Army surplus - from surplus store
31. Dealer specialist (may or may not be store) such as guns or baseball cards
32. Borrowed and never returned (not specific source, but may be viewed as stolen)

While there may be other sources, particularly specialized subcategories (church flea market, antique auction, hobbyist meets, etc.), this may be a useful and fairly inclusive listing which can be refined or categories combined in various ways. It should be noted that pawnshops, trash, and solid waste disposal sites received no mentions. No one bought goods known to be stolen. There were no bribes or business and professionally related gifts. Occasional sales were clearly a small fraction of the instances cited. A majority of respondents made multiple mentions of secondhand items and thus multiple responses as to where they were obtained.

General Conclusions about Buyers

While information was used to evaluate all types of acquisitions of second hand goods, the focus on occasional markets, particularly yard sales is the topic here. The buyers described their behavior and offered opinions about seller as well as themselves and other buyers.

The buyers in these surveys are reflecting experiences in current markets. There is no information about how selected or different from the general population that the experienced yard sale shoppers are, nor is it known why some individuals have not recently been in the market, particularly the yard sale category, but two possibilities exist. One in that the market has no appeal to them whatsoever. The other is that the nature of the market and its operating methods have prevented them from entering the market as buyers. Little is known from this series of surveys about the first question.

Buyers in the current occasional markets have identified a number of factors that are probably of some importance in the development of the markets to date. Among these are standard marketing activities that have appeal and some which do not)depending largely on the individual yard sale, but sometimes perceived by some individuals as characteristic of all sales in the category).

Hypotheses worthy of study can be proposed in an effort to understand the current yard sale markets:

1. Buyers enter the occasional market when they are satisfied as to the qualifications of the market operator.

2. Buyers enter the occasional market seeking specified goods.

3. Buyers enter the occasional market seeking very low prices.

4. Buyers do not search for desirable occasional market.s

These statements may prove true for some types of occasional markets and not for others.

While current markets can be studied with useful results likely to be obtained for improving them in the future, there may be justification for some study of alternative occasional markets or changed market operations. The amateurish and incompetent operators of such markets, it could be argued, need to be trained or replaced with those who can serve markets better. This line of reasoning would occur to those knowledgeable of retailing practices in the traditional business sectors of the economy because yard sale entrepreneurs collectively do not appear to have basic marketing skills.

A middle ground is more likely. Occasional sales are not likely to be perceived totally by consumers against the standards they apply to traditional retailers. Expectations will be lower no doubt because yard sale and other occasional market operators do not have resources to offer the variety, warranties, credit services, and shopping conditions of store merchants at a temporary open-air sale of miscellaneous goods.

There are however some methods that can no doubt be improved upon within the limits of the occasional market. Pricing, advertising and promotion, and site location and conditions can be altered by the smallest seller. Joint ventures (fairs, flea markets, neighborhood sales, etc.) can improve the success of the operators acting only individually. There is room for experiments in serving consumers better and increasing the success of the sellers. There is a literature of books and articles available to those who seek them.

A Call To Arms: Defending and Strengthening Consumer and Family Economics Programs in the Face of the Budget Stringencies of the 1990's

Edward J. Metzen, University of Missouri, Columbia[1]

We are all aware that programs in our field in higher education institutions have come under siege, been downsized, been amalgamated, and even been eliminated. And this at a time when the field is arguably of greater importance to society than ever. The causes underlying these developments are budgetary constraints, lack of understanding and appreciation of our programs, and perhaps in some cases, program weakness.

What can we do, and what can our professional association do, to ward off unfavorable developments? Clearly the best scenario is to try to develop conditions under which attacks will not occur. The more we can do to fortify our position before we come under fire, the less likely that we will have to fight any battles.

Thus the primary prescription is to put a solid fortress in place; build a strong program. Set a high standard for effectiveness and efficiency. And staff the program with troops who have a strong philosophical commitment to our field and to your program. A lack of such commitment will tend to unravel the cohesiveness of a program in times of stress.

Second, get your program on the high ground; program visibility is important. Do good public relations: show how the program relates to institutional priorities and program evaluation criteria; articulate its uniqueness, its differences from other programs on campus; make clear the importance of the contributions it makes; if there are programmatic linkages that should be maintained with other programs to maintain an integrated whole within the same unit, clarify that; if relevant, make known the essentiality of your program for accreditation purposes for the larger unit within which it exists. Emphasize the significant contribution to general education of students from all walks of the campus that is made by various courses in your program. If possible, have some of your courses included in the list approved for general education credit for students in all units on campus. Make clear the relevance of the research done in the program and get results disseminated through the popular media, not just the professional literature. If your program has an extension component, make others well aware of its contribution to the well-being of individuals and families. Be sure that letters from alumni, parents of students, employers, and others, expressing satisfaction and praise for your program, get before the eyes of appropriate people; solicit such letters if they are justified and not otherwise forthcoming. Ballyhoo the accomplishments of your graduates. Maintain a veritable barrage of volleys expounding the strengths of your program. Do not be timid about it; remember well the old saying, "he who tooteth not his own horn, the same tooteth not."

Be political about your program interests. Keep the surrounding territory well scouted, particularly those quarters from which forays against your program might be launched. Maintain contacts and communications with the rest of your relevant world. Be interactive with other units on campus via cooperative working relationships, service in campus governance activities, and the social circuit. Establish and maintain relationships with the power loci and the power people in your institution, and also with those who might have reason to turn against you in times of fiscal stress or other unsettling developments. Try to strike accords regarding territorial rights with those who might come to feel that your program cuts into their turf. Signed treaties, in particular, may thwart what might otherwise be hostile actions against your interests. Eternal vigilance, it has been said, is the price of liberty; so, too, it seems, with the preservation of academic programs under certain conditions. Keep your ear to the ground to

If your program does come under fire, circle your wagons. Maintain effective internal communications regarding conditions, developments, strategies, and possible alternative plans for the future under various assumptions regarding possible developments. Maintain internal cohesion; stick together; the time to deal with internal differences is when peace prevails. Efforts to sustain the enterprise add to the unit's workload, and the on-going work is inevitably done under conditions of additional uncertainty and stress; the frictions that can develop under such conditions must be avoided. An entity that is plagued by disunity or disarray will likely not come through a serious challenge intact. Stand your ground together in a firm, positive manner.

If it becomes essential, call in the cavalry; get support from clientele -- students, parents of students, alumni, advisory boards, employers of graduates, extension program participants, supporters from other units on campus. Direct contacts, letters, and calls to decision-makers may prove helpful to your cause. It is very useful in mustering a counter-attack to have maintained a list of names, addresses, and telephone numbers of graduates, satisfied employers of graduates, and other supporters of the program. Again, such support may be more helpful if it is evidenced regularly before a battle starts than after your program has come under fire.
Proactive is better than reactive.

Finally, negotiations for a peaceful settlement may call for steps toward program improvement of various kinds to insure continued program existence. You may need to be open to taking such steps if they are consonant with program philosophy and increased viability.

All concerned must recognize that implementing strategies for warding off or winning conflicts requires commitment of time and energies; it does not happen by itself. The productive work of the unit must go on, even while some of the productive capacity is absorbed with guarding the enterprise against pillagers. Everyone in a unit can make a contribution to this cause, but those whose role it is to make the primary commitment must have the support of the others as they devote their attention to the strategizing, networking, palavering, negotiating, and leading the charge to keep the enterprise intact and healthy.

What, if anything, can a professional association and professional peers do for a program under siege? Appeals, testimonials, or pressure brought to bear on your institutional decision-makers will, in most cases, not have much, if any, impact on decisions regarding your program. But there are contributions that would seem to be useful. The services of our professional association should in various ways stimulate members into creating the most productive, viable programs possible; building such strength -- establishing invulnerability -- is the primary defense a program can have. A specific action our association might take is to develop a document that articulates the nature, philosophy, and importance of our field, and the consequences that result from diminution, dilution, or destruction of our academic programs. Such a document might prove very useful in helping to educate our institutional administrators regarding our field, and thus to gain their appreciation for what we are and do, and their support for our programs.

The Ghost of Christmas Yet To Come

W. Keith Bryant, Cornell University[1]

The road walked by Scrooge on his way to redemption in Dickens' A Christmas Carol meandered through Christmases past, present and yet to come. Along the way, he found that he had chosen bad friends in the past and adopted inappropriate strategies for pursuing his career. In the present, there were few who pitied him and many more who held him in low regard. The third shade helped him see a future in which grave-pickers would squabble over his little wealth and an afterlife in which he would everlastingly regret not leading a different life. He arose next morning, "born again," ready to turn his life around.

We in consumer economics are already having nightmares. Whether we will awake at all and, if we do, whether we will have the opportunity to turn ourselves around is in doubt. Let me play the ghosts of Christmas Present and of Christmas Yet to Come and show you what I see from my vantage-point in the Northeast.

First, the baby bust has arrived at the doors of colleges and universities. The numbers of 18-22 year olds are down and there is increased competition between and within universities for these traditionally-aged college students. The rise of the mature student has partially offset this decline in some quarters. The competition for students was partially masked from consumer economics departments because of the excess demand for business education by the students of the 1980s. During that period, overwhelmed undergraduate business schools were willing to send us their rejects. This is less true today than it was four years ago. The situation will grow worse until the first wave of the echo to the baby boom reaches college in about 1998-99.

Second, college costs nationwide have outstripped the CPI consistently for over a decade and continue to do so. From 1980 to 1987, tuition grew at twice the CPI in both public and private colleges nationally.[1] The Federal government has compounded the situation with its retreat from student aid. The reticence of the states to raise taxes combined with increased competition for state funds by Medicaid and welfare have left states unable to fill the gap. Both student aid and budgets for higher education have declined in real terms, therefore. The current recession simply multiplies the woes, especially on both coasts, but the midwest and plains states are not exempt. Indeed, they went through the wringer of the farm recession in the 1980s and have yet to recover.

The reaction of universities to budget deficits countrywide has been to retreat toward the center, the center being the disciplines. Being on the periphery, adjectival and interdisciplinary fields are being asked to shrink or go away. Such departments located in colleges of agriculture are somewhat protected by the historically narrow but deep political support they have garnered. Departments in colleges of human ecology and home economics are much less protected for three reasons:

(a) The political support from our clients, families and consumers, is very diffuse and hard to capitalize on.

(b) We have never been able to shake off entirely the stigma of being concerned with "women's work." Colleges of Home Economics continue to tend to be viewed by older male administrators and trustees of universities, therefore, as "something for the ladies" and certainly dispensable in hard times.

(c) We have never been very useful to groups and agencies with sufficient political power to argue persuasively for us. Some of these groups and agencies are Consumers' Union, Consumer

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[1] Professor and Chair
Consumer Economics and Housing

Federation of America, Nader's Raiders, and consumers affairs departments of corporations. Consequently, they cannot and will not support us politically.

If you want ample evidence of this last point, ask yourself whether the programs of these groups would be seriously affected if Consumer Economics departments did not exist. Each of these groups and agencies turn primarily to business schools, law schools, economics departments, and engineering schools when they need academic help. Few of these agencies would grieve our passing and some would not even realize we had passed away.

Two other forces are working to our disadvantage. The first is that land grant universities countrywide are struggling with the philosophy expressed in the Morrill Act.[2] To the extent that the land grants are jettisoning the land grant mission, applied client-centered fields such as ours, where extension is important, are in grave jeopardy. The second is that the rise of the junior and community college systems in every state provide state universities with stiff competition for both students and as research and extension agencies in service to the people of their communities.

So much for Christmas Present. What about Christmas Yet To Come. I will be brief. I have yet to meet a senior administrator of a university or a member of a university board of trustees willing to sacrifice the quality of the parent disciplines in favor of an applied, multidisciplinary field located anywhere other than in medical schools, business schools, and engineering colleges. So, I am not optimistic. Consequently, I believe that the field will be lucky if there are four stand-alone departments with strong undergraduate and graduate programs left in the country in the year 2000. The rest will have been merged with departments of agricultural economics, human development and family relations, and in a few cases with retailing departments. This process is already far along. Most of us, provided we are tenured, will not reside in consumer economics departments. We will be in small sections of other departments. Many of us are already. For the most part, our colleagues in those departments have agendas other than ours. Consequently, it will be very difficult to maintain our strength over the long-run. Indeed, part of our present problems arise from the difficulties we face trying to survive and grow as minority interests in larger departments.

Will my Christmas Yet to Come arrive despite our best efforts at redemption? I hope not. Scrooge began by hailing a boy and having him deliver the prize turkey to the Cratchits. There are few boys waiting to do our bidding and we don't have access to many prize turkeys. There are, however, some things we can do. These are of a short- and a long-run nature.

In the short-run, we can support each other in our times of fiscal troubles. Well-timed letters to presidents, vice-presidents, members of boards of trustees, and even to selected politicians in support of our programs will help. For instance, we at Cornell are under siege by our Provost who wants to "rationalize" economics and in the process shrink or eliminate Consumer Economics. At some point, I may need you to write letters to him telling him how valuable we are. In the short-run, too, we can garner and organize what support we have in each of our states. Finally, our students can be persuasive ambassadors on our behalf. Hence, we should make sure that we teach as well as we can. In all of this we should be pro-active rather than defensive.

In the long-run, I believe we must become useful to groups and agencies who have political strength in our states and nationally. By useful, I do not mean doing or saying what we do not believe. Rather, I mean, producing high quality research, extension, and adult education programs which speak to the needs of our states' attorneys-general, CFA, AARP, Consumers' Union, and the federal and state agencies like the FTC, FDA, and CPSC, who regulate and run programs in the consumer interest. We have always been good at serving individual consumers and families. Now, we have to learn to be good also at serving the larger groups and agencies that serve consumers and families. Last but not least, we must be relevant to corporate consumer affairs departments. One way to do this is to produce students who can improve the quality of these agencies as employees. Another way is to mount training programs for consumer affairs managers and employees that will have them clamoring for more.

There are three purposes to be served in my long-run strategy. The first is to develop good relationships with groups and agencies who can and will speak on our behalf when budgets are threatened. The second and third purposes are to increase the amount of grants and contracts in consumer economics. These grants and contracts increase our budgets and enable us to pursue our programs better. They also earn overhead for our institutions. Both are salutary. Universities are loath to do away with units that earn overhead.

Scrooge had the opportunity to awaken from his nightmare and redeem his life. Things often happen that way in fiction, at least in nineteenth century fiction. Will we have the time to redeem ourselves? For some of our programs it is too late. For the rest of us, there is a little time left.

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1. Hauptman, A. (1990), The tuition dilemma, Washington, D.C.: The Brookings Institution; p.2.

2. See: Schuh, G.E. (1986), "Revitalizing Land Grant Universities: It's time to regain relevance," Choices, no. 1, pp. 6-10 and Bromley, D.W. (1986), "Re: Ed Schuh's Revitalizing Land Grant Universities, Choices, no. 1, pp. 39-40 for two sides of the debate.

Proposed Elimination of the Consumer Economics Program at the University of Maryland.

Rachel Dardis
University of Maryland

The program in consumer economics at the University of Maryland is in the Department of Textiles and Consumer Economics in the College of Human Ecology. A University Committee has proposed the elimination of the Department and its programs and the University Senate will act on the recommendation in Spring, 1992. The College of Human Ecology played a major role in this development. Initially there were four departments in the College. However, a 1985 campus reorganization resulted in the transfer of one of these departments to another College. In the Summer of 1991 the University of Maryland at College Park faced serious budget problems and a large scale investigation of colleges, departments and programs on the College Park Campus commenced. Low priority programs were at risk. The College of Human Ecology was identified for possible elimination and a College Committee was appointed to examine possible future locations for departments, programs and faculty in the College. At this time, faculty in the Department of Human Nutrition and Food Systems, which was in the College of Human Ecology, expressed an interest in moving to the College of Agriculture. It then became necessary to find a home for the two remaining departments in the College, one of which was the Department of Textiles and Consumer Economics. Unfortunately, it was not possible to find an academic home for this department in other multidisciplinary Colleges on the College Park Campus. Thus, TXCE department and its programs were recommended for elimination.

There were two major issues that were never considered by the College Committee and the University Committee in their deliberations. First, the issue of whether there should be a College of Human Ecology was never addressed. Rather the College Committee was asked to consider where programs and faculty might be relocated in the event that the College were eliminated. Second, the issue of whether there should be programs in textiles or consumer economics was never addressed. Instead, it was left to faculty in the TXCE department to find an academic home for their programs. Unfortunately, the faculty were not united in this endeavor and some faculty saw greater professional opportunities for themselves in the event that the department and its programs were eliminated. This created problems for the majority of the faculty who were attempting to find a new academic home for the TXCE department and its programs. Failure to find a home meant that the department and its programs were recommended for elimination. This type of decision is a default decision and lacks academic justification since the Department of Textiles and Consumer Economics has the strongest academic programs and the greatest number of undergraduate and graduate students in the College of Human Ecology. However, the interests of faculty, students, and alumni, who were committed to the department and its programs, received little consideration. One administrative explanation for the proposed elimination of the TXCE department may be the fact that it has several nontenured faculty and several senior faculty who may retire in a few years. Such potential resources are attractive in the continuing budget crisis which faces the College Park Campus.

A Call to Arms:
It's Difficult When You Don't Know Why You Are Armed

Elizabeth M. Dolan, University of New Hampshire[1]

At the University of New Hampshire, consumer studies is part of the Department of Family Studies. The Department was informed by the administration in late spring 1991 that the consumer studies undergraduate program would be reviewed for possible elimination. Our program was not the only one which was slated to undergo this review.

By way of background, in early 1991, in response to an expectation of a substantial budget deficit during the 1991-92 academic year, each program at UNH had to submit a three-page summary review responding to four domains: cost, quality, demand and centrality. These summaries were reviewed by a task force which then made recommendations to the administration. When the budget crisis failed to materialize due to a greater influx of students and greater state support than anticipated, the immediacy of cutting programs and personnel lessened. The administration has since denied the existence of any list naming programs and departments to be reviewed for possible elimination.

The department of family studies has not been able to discover why the consumer studies program was put on a list for an elimination review. The minutes of the task force have never been released, even to those entities most affected by their discussions. We recently learned, however, that cost and demand are not problems.

In the fall of 1991, the department was asked by the dean to complete a "self-review" of the consumer studies program. The dean requested that the review be focused on future initiatives. The committee working on the review decided quickly that a prime goal was to educate the reader of the report about the consumer studies program in the department of family studies, and to provide a brief overview of the discipline in general. We also asked for input and suggestions from a number of persons outside the department and university community with which there have been linkages over the years, such as the state department of education, attorney general's office, and a representative of the business community. When the review was submitted to the dean, he and we were convinced that the crisis had passed.

In late February 1992, the department received a memo from the dean stating that the decision regarding the consumer studies program would be made by the end of this semester.

In a time of economic tribulations it can be expected for the university administration to search out weak and/or unconnected programs to be eliminated or reorganized. We do not believe that our program is either, but rather quite the opposite. We are convinced that "they" do not understand the program, nor how it differs from what is done in the business school. Remember, however, that even after repeated requests, we have never been able to discover the basis of the recommendation. It appears to us that "committee" recommendations to review our program for possible elimination were based more on political perceptions than on any defensible or objective criteria.

As a side-bar, UNH is also very concerned about affirmative action issues. UNH has very few minority faculty and very few minority students. There is also great concern about the lack of female faculty in some departments (where there are large numbers of female students). UNH has begun a concerted effort to attract more minority faculty and students, and to work toward hiring more female faculty in traditionally all-male departments. The Family Studies Department probably has the most balanced and integrated faculty of any department in the university: five females and four males; two minority faculty, both in the consumer studies area.

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[1] Associate Professor, Department of Family Studies

In the meantime, we are proceeding with several initiatives which we hope will convince the powers-that-be that this is a worthwhile endeavor. (These discussions began before the review.) The administration is interested in linking the university community and programs to the community. We hope our efforts along this line will be fruitful in more ways than one.

What is to be done? First of all, hope you never get into a situation where you are fighting for your professional and programmatic identity without knowing why you are having to fight! Solidify community contacts by developing programs which call on these resources as much as possible. "Schmooze" with the important people as much as possible. If your university sponsors a "Legislators Day" as UNH does every year, invite legislators to your classes. Do whatever you can think of now to inform people about your strong, vibrant, and relevant programs.

In these economically troubled times at universities, we all need to learn not to hide our lights under a basket. Administrators need to be taught to appreciate what our discipline can add to the student's academic experience.

Teaching Consumer Affairs from a Distance: The Pros and Cons of Distance Education

Constance C. Adams, Charles Sturt University-Riverina[1]

Distance education fills a need not met by the traditional education structure. Charles Sturt University, Australia's largest Distance Education Centre, has pioneered the development of external courses in diverse areas including consumer affairs. The roundtable facilitator shared her experiences in teaching via this method.

Introduction

In Australia, where students live in scattered communities covering a large geographic area, and where face-to-face teaching is difficult, expensive, or impossible to organize, distance education is flourishing. Charles Sturt University offers more than 80 courses at undergraduate and postgraduate levels in a broad range of disciplines to about 8500 part-time external students and 4800 full-time students on three campuses in New South Wales. External students come from all states and territories and the Asia-Pacific Region; and from metropolitan as well as non-metropolitan areas.

Distance education is a learning system with three components: (1) teacher and student are physically separated; (2) there is communication and interaction between teacher and student; and (3) teaching is conducted through print, mechanical, or electronic devices, and may include instruction kits sent through the mail in printed form, audio cassette tapes, radio, television, or telephone.

Topics Discussed

The discussion focused on the following topics: students, faculty members, the University, and external factors.

External students are mature age, often employed full-time, upgrading their qualifications or gaining a formal qualification. They are studying for profit (promotion or salary increase) or for pleasure (interest in subject matter).

They need to have determination, persistence, and an independent nature, and be well organized. The support and understanding of their family is crucial. They must be able to integrate study with family and work commitments. Since they are studying part-time, they usually take twice as long as their internal counterparts to complete their course. The attrition rate is higher than for on-campus students; this is related more to personal circumstances than for academic reasons.

Faculty members also need to be well organized and able to juggle internal and external teaching. The demands of external teaching include preparation of mail packages and planning and presenting residential schools. Being approachable and friendly is a must. Faculty members act as facilitators, consultants, and supporters. Assessment may be different for external students than for internal students.

A university with a distance education program must provide for design and production of education materials, assignment handling and return, and student support services, such as responding to student queries, examination centres, residential schools, library services, and counseling.

External factors discussed were textbook availability and reliability of the postal system.

Conclusions

While there are problems with this method of education, there are many rewards as well. External students are highly motivated and are better students than their internal counterparts.

There is more than one way to teach - the traditional way and the non-traditional way. Distance education is not the poor cousin of on-campus education.

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[1] Lecturer, Consumer Affairs

College Student Time Use and Formation of Human Capital

Mary E. Pritchard, Northern Illinois University[1]

Purposes of the roundtable were to identify individuals interested in studying undergraduate time use, discuss theoretical frameworks that might be used in studying student time use, identify data sets that include information on student time use and other variables of interest, and discuss the implications of student time use on formation of human capital both for the individual and the society.

A number of economic and societal factors have caused changes in the undergraduate college experience for traditional-aged students. Federal and state budget restrictions have decreased financial aid for students and reduced financial support for public and private colleges and universities. Family financial problems and lack of saving have diminished the contribution that families can make to college costs.

The resulting financial strain has forced many traditional-aged college students to expand their employment from the summer to the academic year. Fewer students experience "studenthood" which Whipple describes as a distinct stage between adolescence and adulthood in which students could focus energies on "the exploration of our minds and to the theories and facts of human knowledge" (McCartan, 1988).

How do these trends influence the use of time by college students? What are the implications for human capital formation and the quality of the educational experience? Participants in the roundtable disscussed the following issues related to college student time use.

1. To what extent does college student employment contribute to or detract from the development of human capital? (Ghez and Becker, 1975; Juster and Stafford, 1991).
2. What is the most productive use of colleges student's time? (Reed, Puchalski, and Denham, 1984).
3. How would one define and measure the "quality" of human capital or "quality" of learning in college? (Pace, 1988; Pace, 1992).
4. How does the "worked my way through college" philosophy fit into this analysis?
5. Are there developmental changes over the college years that relate to time use? (Desmond and Glenwick, 1987).
6. Are the financial stresses reported by several studies unique to the current time period? Are current financial and employment trends expected to continue? (Archer and Lamnin, 1985).
7. Is higher student achievement (grades, test scores, etc.) associated with more time spent studying? (Caporael, 1985; Levin and Tsang, 1987).
8. Some researchers suggest that academic achievement suffers when high school students are employed more than 20 hours per week. (Greenberger and Steinberg, 1986). Can a similar predication/ recommendation be made for full-time college students?
9. Are college students working to pay educational costs or to earn money for discretionary expenditures?
10. What data sets contain questions on time use by college students and measures of student/graduate achievement? (Holyoak, Sawai, Kelsey, and Olson, 1990).
11. What factors might confound the relationship between employment and achievement, gender, intelligence, motivation, cost of attending a particular college, and type of job? (Hogan and Hendrickson, 1984).

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[1] Associate Professor
Family & Child Studies

12. How is undergraduate employment related to course load and the number of semesters needed to complete a baccalaureate degree?

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A Computer Aided Comparison of Australian Banking Prices and Services 1991

Judy Taylor, Assistant Lecturer[1]

The discussion investigated the usefulness of an expert computer system that makes retail banking deposit products transparent; and produces longitudinal data for research and policy uses.

The choice of an appropriate retail bank deposit product by consumers has become complicated since deregulation (1980's) due to four main factors; (1) banks charge in a variety of ways for services once provided free; (2) the methods used to calculate interest; (3) the intervals at which interest is paid; and (4) the variety of ways the banks define 'transaction'.

Education of consumers may enhance competition however the cost of gathering timely information on product cost and availability, combined with the need to convert the cost into a standard measure to enable meaningful comparison of the products will be beyond the cognitive capacity of most consumers. While there is evidence that not all consumers have to shop to improve the efficiency of the market, there is also evidence that imperfect information can give each firm market power and "the equilibrium (if one exists) will be characterized by prices above competitive levels and sometimes price dispersion as well."

The terms and conditions on which products are offered to consumers vary widely over the survey years (1988-1991).

Some of the results for 1991 are listed below. In 1991 Victorian consumers had 86 non-term deposit accounts compared to 76 in 1990. Of those, in 1991 there were 41 passbooks or statement saving accounts, 15 cheque accounts 15 packages and 15 yield or money market accounts.

1991 was the first year of the survey that the number of accounts that calculate interest on a daily balance was equal to those that calculate interest on a minimum monthly balance.

It was also revealed in 1991 that 55% (51% 1990) of accounts have account keeping fees. Forty Seven (41%) paid interest on the first dollar. This is compared to 46 (59%) in 1990 and 48 (64%) in 1989.

An expert computer system that performs the functions of gathering information on a timely basis and converting it into a uniform measure is possible in Australia because of the small number of banks in the retail arena.

Australian Context

There are approximately 32 banks in Australia (1992). these can be classified under the following groups: Old Majors, 4; Old State, 6; New Domestic, 6; and New Foreign, 16.

The old majors have maintained a significant market share of both assets (73%) and the retail branch network (81%) during the deregulatory period.

Most of the foreign banks have not attempted to set up a retail arm. Of those that did, National Mutual Royal Bank (National Mutual and Royal Bank of Canada) and Chase AMP each have been taken over by one of the big four.

The new domestic banks were formerly building society's that have converted into banks.

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[1] LaTrobe University, Australia

These organizations balance sheets have consisted of assets which were traditionally in the residential housing market and liabilities from the household sector, often at competitive rates. These organizations have been more successful in the retail market than the new foreign banks because they had well established branch networks prior to deregulation.

The old State banks are now beginning to disappear. They are being taken over by either other state banks (Tasmania and South Australia); the government banks (Victoria); or put out to tender (NSW and Western Australia).

This means that any expert system for use by consumers has to cover about 10 banks within each state of Australia to cover the retail market.

Ten banks have been surveyed once each of the last four years, representing approximately 96% of the market. The other three to four percent is relationship banking provided by foreign banks to very high net worth customer.

The System

The system is user friendly. It uses the data over the survey period of the individual banking profile of the consumer it converts their choice or choices of products into effective interest rates. Because the fee structure varies infrequently it is not necessary to update on a weekly basis, generally interest rate movements preserve the ranking of the products and the ranking is only changed by annual fee movements.

The Uses - Consumer and Researcher

Because the same banks have been used in the survey over the four year period the data can be used to analyze the impact of changes in fee structure and access to the clearing and electronic payment system. It will also identify policy changes by banks.

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Sharing Ideas for Teaching Intermediate Consumer Economics Micro-Theory Courses

Robert O. Weagley, University of Missouri, Columbia
Jutta Joesch, Bell Laboratories[1]

Participants in this session represented a variety of departments: Consumer and Family Economics, Consumer Sciences, Consumer Economics and Housing, Merchandising, Consumer Studies & Design, Agricultural Economics, Economics, Home Economics, and Family Environment. Perceptions of the meaning of a course intended to teach Intermediate Consumer Economics Micro-Theory were discussed.

At some institutions, courses are oriented toward consumer policy. Others teach half theory and half policy. At least one professor emphasizes the economics of consumer behavior. Several indicated that the course they teach is strictly theory. Several departments offer a sequence of courses ranging from a three quarter to a five quarter sequence.

It was agreed that students need to know that micro-theory is critical to understanding consumer problems. Consumer economics provides a bridge to other courses within the discipline. We are the logical bridge between the consumer and the family because we have more institutional hooks -- the applications. Consumer economics gives the theories a chance to live.

An important reason for teaching Consumer Economics is that, typically, departments of Economics do not teach about the consumer. They use the abstract and mathematical approaches and have been observed to be moving more and more to the theoretical. We need to see this as an opportunity. It is our unique role to deal with the consumer -- to link policy with the empirical.

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Validity of the Self-Reported Food Sufficiency Status Item in the U.S. Department of Agriculture's Food Consumption Surveys

P. Peter Basiotis, U.S. Department of Agriculture [1]

Starting with the 1977-78 Nationwide Food Consumption Survey (NFCS) of the U.S. Department of Agriculture (USDA), respondents for households participating in food consumption surveys were asked to rate their household's food supply as to its sufficiency. In an attempt to statistically evaluate the validity of the responses, data from food stamp eligible participants in the 1977-78 NFCS were utilized to estimate income elasticities of food cost, and food energy consumed by the households by self-reported food sufficiency status. Results indicate that self-reported food sufficiency status could reflect "true" but unobservable household food sufficiency status.

Introduction

The issue of hunger or food sufficiency in the United States received considerable attention in the last decade. The President's Task Force on Food Assistance was established on September 8, 1983, by an Executive Order in response to anecdotal reports that the incidence of "hunger" in the United States was on the increase. The Task Force developed and presented a report to the President in January of 1984 (President's Task Force on Food Assistance, 1984). In its report, the Task Force suggested that there are two characterizations of hunger: One is the scientific or physiological characterization used by health professionals--"the actual physiological effects of extended nutritional deprivation." Several reports have indicated that such hunger in the United States is probably not as prevalent as in many other countries. The second characterization of hunger relates more to a social phenomenon than medical evidence. In this sense, "hunger is the inability, even occasionally, to obtain adequate food and nourishment." Although information concerning "physiological" hunger is far from adequate, even less quantitative information is available about the second characterization of hunger.

Most of the existing reports on the extent of insufficient food intakes in the population rely on indirect measures or indicators such as estimating the number of individuals below the poverty line, receiving free food at soup kitchens, and having no place to live. One indicator of food sufficiency, however, is self-reported food sufficiency. Beginning with the 1977-78 Nationwide Food Consumption Survey (NFCS) of the USDA, the household respondent (the person deemed most knowledgeable about household food purchasing and preparation) was asked the question "which of the following statements best describes the food eaten in your household?" There were four possible answers: 1."Enough and kind wanted to eat;" 2. "Enough but not always kind wanted to eat;" 3. "Sometimes not enough to eat;" 4. "Often not enough to eat."

This question was purposely designed to require the respondent to consider the quantity (enough) and the quality (kind wanted) of food together. It attempts to avoid "leading" the respondent to report insufficient food, as in questions such as, "did you run out of food?" However, the precise understanding of the question by respondents and its validity were not tested before it was used.

Based on previous analyses using the NFCS, responses to this question appear to be statistically associated with household food costs and with food energy and nutrient levels (Smallwood and Blaylock, 1985; Basiotis and Kirby, 1985).

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[1] Economist, Human Nutrition Information Service. Also, Adjunct Assistant Professor, Department of Textiles and Consumer Economics, University of Maryland, College Park

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Responses to this question were also used to derive a set of poverty thresholds on the assumption that the responses were accurate reflections of household food sufficiency (Blaylock and Smallwood, 1986). The resulting poverty thresholds were rather close to those currently in use by the U.S. Government. Expanding on the work by Blaylock and Smallwood, Blaylock (1987) used responses to the food sufficiency question to derive food plans that compare favorably to those currently in use by the U.S. Government. Despite these positive findings it remains unclear as to whether self-reported food sufficiency is an accurate reflection of "true" household food sufficiency. An indirect way to examine the validity of this food sufficiency indicator would be to test whether self reported food sufficiency status is in agreement with food consumption behavior revealed prior to reporting food sufficiency status.

The purpose of this study was to test the hypotheses that households describing their food supply as not sufficient have higher income elasticities for food expenditures and for the aggregate commodity "Food," as measured by food energy or calories consumed by the household; and to obtain estimates of income elasticities for food energy price/quality for each food sufficiency category and compare them. Rejection of these hypotheses may cast doubt on the validity of self-reported evaluations of household food supply as an accurate descriptor of the household's true food sufficiency status. On the other hand, failure to reject these hypotheses is not sufficient to guarantee the validity of self-reported food sufficiency (but may encourage further research on the subject). This is because the objective rests on the underlying assumption that as household resources become more and more limited, households reduce expenditures on food (and on other commodities) by consuming lower priced varieties of food while maintaining a reasonably constant amount of food energy in order to maintain body weight and health. Substantial reductions in the quantity of food energy consumed may follow exhaustion of price/-quality reduction possibilities. It is thus expected that households which truly do not have sufficient food supplies (whatever the definition of food sufficiency) will have, on average, higher income elasticities for food costs or expenditures, and food energy than other households. They will have lower price/quality elasticity if their food energy consumption is restricted; otherwise, they are expected to have a price/quality income elasticity similar to that of households with sufficient food. The converse reasoning need not hold, however. That is higher income elasticities for food expenditure, and energy, and lower price/quality income elasticity, do not necessarily imply not sufficient household food supplies.

The analysis entailed the following steps:

I. Utilizing household data from the 1977-78 NFCS, and dividing the sample into three food sufficiency categories of households. A household was classified as not having sufficient food supplies if the response was "sometimes not enough to eat" or "often not enough to eat;" having marginally sufficient food supplies if the response was "enough but not always kind wanted to eat;" and a household was classified as having fully sufficient food supplies if the response was "enough and the kind wanted to eat."

II. Estimation of double-log unrestricted reduced form equations for food costs, food energy available to the household, and price/quality of food as functions of household income, size, and other household characteristics available from the NFCS for the food sufficiency categories using appropriate statistical methods;

III. Comparison of income elasticities thus obtained and drawing of conclusions.

The results may be of interest to consumer economists, data collecting agencies, Federal food assistance program planners, the academic community, and the public at large.

Methodology

Model Development

In demand estimation with cross sectional data the assumption is usually made that there is little or no price variation (Capps and Havlicek, 1984; Cox, Ziemer, and Chavas, 1984; Purcell and Raunikar, 1971). Whatever price variation there is, it is

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assumed, is controlled for by supply related factors such as geographical region and urbanization. However, an important share of price variation in cross-sectional data, which is often ignored, is price variation due to quality differences caused by heterogeneous commodity aggregates, such as food energy (e.g., Houthakker, 1952). Insightful discussions of price/quality variation and its sources can be found in Cox and Wohlgenant (1986), and in Deaton (1987, 1988).

In conventional Engel analysis of household food consumption data, expenditures, C, are hypothesized to depend on real income, Y, household size, and other household characteristics. By the definition of expenditures as price (P) x quantity consumed (Q), it follows that

$$\log C = \log P + \log Q \qquad (1)$$

Thus, given the Engel relationship, we have

$$\frac{\partial logC}{\partial logY} = \frac{\partial logP}{\partial logY} + \frac{\partial logQ}{\partial logY} \qquad (2)$$

Where $\partial logP/\partial logY$ is the quality elasticity (Prais and Houthakker, 1955). While for a homogeneous good this elasticity is assumed to be zero, for a highly aggregated commodity such as food energy it is non zero (Prais and Houthakker, 1955).

Utility maximization incorporating the quality dimension yields demand functions for quantity and quality of the commodity (Cox and Wohlgenant, 1986). Any two of the three terms in (1) can be estimated as functions of income, household size and other household characteristics with the third following from the identity. With cross sectional data it is often assumed that the qualitative nature of an aggregate commodity is reflected in its average price, especially after controlling for possible (quantity) price components due to regional supply differentials (Houthakker, 1952; Theil, 1952). Thus, the food energy quality/price equation can be specified:

$$C_i/Q_i = P = X_i\, b^p + e^p \qquad (3)$$

where $i = 1, 2, \ldots, N$ = number of households, X_i is a vector of household characteristics including income and geographic location, b^p is a vector of coefficients to be estimated and e^p is a vector of regression residuals (Houthakker, 1952; Cox and Wohlgenant, 1986).

Similarly, the expenditure and quantity equations may be specified as

$$Ci = X_i\, b^c + e^c \qquad (4)$$

$$Qi = X_i\, b^q + e^q \qquad (5)$$

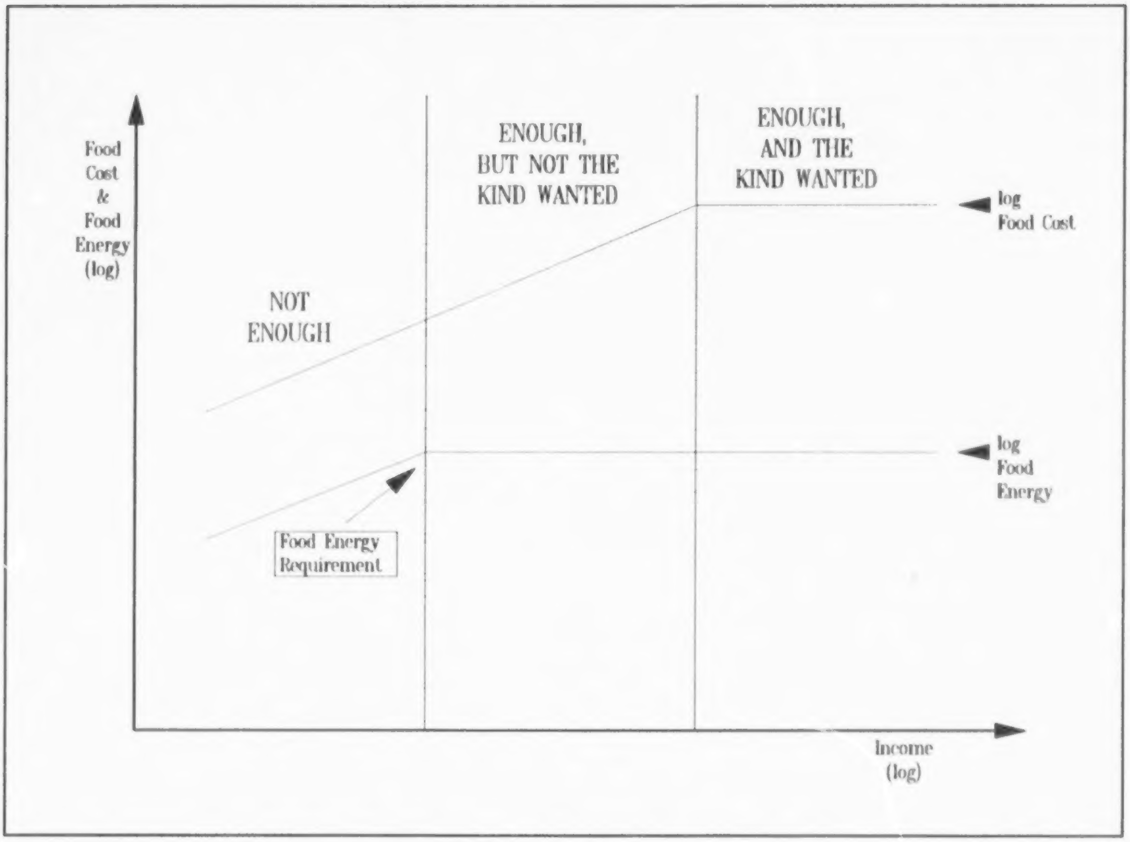
In this specification, the unrestricted reduced form is estimated. The functional form chosen was the double log as it permits direct estimation of income elasticities. It is also appropriate for estimation of Engel curves for food (Prais and Houthakker, 1955). The estimated income coefficients in (3) - (5) are the respective income elasticities and satisfy (2).

The Food Sufficiency Curve

Suppose that households respond to decreases in economic resources by maintaining consumption of a reasonably constant amount of food energy (which is determined by physiological and other factors) while conserving monetary expenditures by purchasing cheaper sources of food energy (they probably reduce expenditures on other items also). If economic resources are reduced even more, further reductions in the price or quality of food energy may not be possible (while maintaining a palatable enough diet to be edible) and reduction in the amount of food energy consumed may be necessary in order to reduce food expenditures or costs. At this point one may reasonably assume that "food insufficiency" has begun, thus, possibly providing a conceptual definition of food insufficiency.

Considering the assumed food consumption process above, one would expect that, before the point is reached where the household begins restricting the amount of food energy consumed, any increments in the household's food expenditures would be devoted to purchasing higher quality, and more expensive, sources of food

Figure 1.
The Food Sufficiency Curve


Food Cost & Food Energy (log)
NOT ENOUGH
ENOUGH, BUT NOT THE KIND WANTED
ENOUGH, AND THE KIND WANTED
log Food Cost
log Food Energy
Food Energy Requirement
Income (log)

energy. Beyond the point where the household starts reducing the amount of food energy consumed, one would expect any increments to household food expenditures to be devoted to purchasing higher amounts of food energy.

Since this assumption appears reasonable, it can be used to examine the validity of the food sufficiency question in USDA's dietary surveys: If households reporting their food supplies as insufficient truly have insufficient food supplies, they should be reacting to changes in economic resources (income) as described above. The economic concept of choice in describing food consumption behavior is that of elasticity. To illustrate these concepts, refer to figure 1. If, for simplicity, the logarithmic scale is assumed, then the slope of the "Food Energy" curve in figure 1 represents the income elasticity of food energy consumed. If the hypothesized process described above is valid then "sufficient" food households should exhibit a flat slope for (log) food energy as a function of (log) household income. "Not sufficient" food households, on the other hand, should be characterized by a positive (log) food energy slope (elasticity) as a function of (log) household income. Similarly, "fully sufficient" food households should be characterized by a flat food cost or expenditure slope as a function of (log) household income. "Marginally sufficient" and "not sufficient" food households, on the other hand, should exhibit a positive (log) food expenditure slope (elasticity) with respect to (log) household income. From equation (2) above, it follows that the geometric distance between the two curves, or the algebraic sum of the two slopes, is equal to the income price/quality elasticity.

Data and variables definitions

Data from USDA's 1977-78 Nationwide Food Consumption Survey were utilized to estimate (3) - (5) for each of the self-reported food sufficiency categories described previously. Findings from a test for sample selection bias which might result from partitioning the data in this way will be discussed subsequently.

The 1977-78 NFCS contains dietary and other information collected from approximately 15,000 U.S. households over a one-year period. Due to incomplete records (mainly due to nonreporting of income) data from 10,338 households were available for analysis. Of these, 358 or 3.5 percent reported their food supply as not sufficient. Over 80 percent of the households reporting their food supply as not sufficient were income eligible for the Food Stamp Program. Since households not eligible for the food stamp program would be rather unlikely to report not having enough to eat, and in order to make more meaningful comparisons between the food sufficiency groups only 2,747 low income food stamp program eligible households with complete records were retained for analysis in this study. Of these, 297 households or 10.8 percent reported their food supply as not sufficient, 1,144 or 41.6 percent reported their food supply as marginally sufficient, and the remaining 1,306 or 47.6 percent reported their food supply as fully sufficient.

Households reported quantity and price or cost of each food used from the household food supply during one week. Households then provided information on income for the previous calendar year and the previous month, whether food stamps were received, and information on other household characteristics and activities. Lastly information on the household's self evaluation of its food supply was provided.

Total costs and the total food energy content of all food used by the households during the week prior to the interview were adjusted using the "21 Meal at home Equivalent Person" concept (21 MEP) in order to account for differences in the number of at-home meals consumed by household members (USDA, 1985; Smallwood and Blaylock, 1984). The selected measure of household income for this analysis was last month's income (including food stamp program benefits) rather than last year's. The rationale was that a "not sufficient food" household status is more likely to be temporary in this country than permanent. Thus, last year's income, which may reflect mostly permanent income, was inappropriate for the purposes of this analysis. Last month's income was expressed as income per person per week by multiplying by 12, dividing by 52, and dividing by the number of people in the household. Other variables used in this analysis were: Number of individuals in Household (in 21-MEP); Distance from household to food store; Urbanization; Region; Season of survey interview; Participation in government food and housing assistance programs; Headship status; Employment status of head(s); Education status of head(s); Race; Ethnic origin; Who the primary meal planner/preparer is; Whether household had guests eating.

Variables commonly used as proxies for unobserved household preferences for food quantity and quality as well as for food market supply and availability (e.g., season of year) were included (Pollak and Wales, 1978; Basiotis, et al., 1983). In addition, since the analysis was exploratory, a number of additional variables were included in the estimation of the Engel and price/quality equations to serve as controls. The statistical consequence of including many, and some possibly irrelevant, variables in a regression model is that estimated coefficients are unbiased; however, they likely have larger variances. Consequently, tests of hypotheses using the estimated coefficients (e.g., income elasticities) tend to be conservative. In addition, statistical tests of hypotheses performed did not take into account the complex nature of the survey design. Thus it is possible that the estimated standard errors of the coefficients are biased. This will be unlikely, however, if estimated coefficients

Table 1.
Weighted Means of Key Variables by Food Sufficiency Status

	Income Last Month per Person per Week	Weekly Food Cost per 21 MEP	Household Weekly Food Energy Consumed per 21 MEP	"Price:" $'s per 1,000 Kcal Consumed by Household
Enough and the Kind Wanted (N=1,306)	$46.11	$16.64	21,092 Kcal	$ .81
Enough but Not the Kind Wanted (N=1,144)	$38.38	$15.58	21,327 Kcal	$ .75
Not Enough (N=297)	$30.78	$14.70	20,679 Kcal	$ .73

Table 2.
Estimated Household Responsiveness to Increases in Household Income and Expenditures

	Estimated Household Responsiveness to Increases in Household Income			Estimated Household Responsiveness to Increases in Household Food Expenditures	
	Estimated Income Elasticities (and P-Values)			Estimated Expenditure Elasticities	
	(1) Food Cost	(2) Food Energy	(3) Price/ Quality	(4) Food Energy (2)/(1)	(5) Price/Quality (3)/(1)
Enough and Kind Wanted	0.02 (p=.24)	0 (p=.93)	0.02 (p=.03)	0	1
Enough but Not Kind Wanted	0.12 (p=.0001)	0.04 (p=.16)	0.08 (p=.001)	0.33	0.67
Not Enough	0.19 (p=.0003)	0.12 (p=.02)	0.07 (p=.005)	0.63	0.37

are highly significant, e.g., significant at the 0.01 level.

Results

Due to space limitations only results on key variables and income elasticities will be discussed herein. Results for the remaining variables included in the model are available on request. Estimated means for income, food costs, food energy, all per 21 MEP, and the food energy price/quality variable by self-reported household food sufficiency category are shown in Table 1. (These means were weighted by the appropriate sample weights so that they are representative of the food stamp program eligible population for the year of the survey). It can be seen that, with the exception of household weekly food energy consumed per 21 MEP, estimated mean income, food cost, and price/quality declined with food sufficiency status. In contrast, the estimated mean food energy consumption per 21 MEP remained relatively constant across food sufficiency categories (at about 21,000 kcal).

Recall that given (1) and the common Engel relationship specified, the estimated coefficient vector of any one of the three regression equations may be obtained as the sum of the coefficient vectors of the remaining two equations. Nevertheless, all three equations were estimated and income elasticities are presented herein for ease of comparability and statistical testing of coefficients or elasticities.

The estimated income coefficients, or elasticities, and the corresponding P values, by food sufficiency category are presented in table 2. From table 2, it is seen that the estimated income elasticities (slopes) for food expenditures and food energy available per 21 MEP were not significantly different from zero for the fully sufficient food category. Their difference, however, reflecting an income elasticity of price/quality of .02 had an estimated p value of .03. For the marginally sufficient category, the estimated income elasticity for food cost was .12 and highly significant. The food energy income elasticity was not statistically significant ($p=.16$). The price/quality income elasticity, at .08, was significant at the .001 level. The income elasticity of food cost was .19 and highly significant ($p=.003$). The estimated income elasticity of food energy available per 21 MEP was .12 and significant at the .02 level. The price/quality income elasticity was .07 with an estimated p value of .005.

Estimated expenditure elasticities for the three variables are also presented in table 2. These follow from the estimated income elasticities (Prais and Houthakker, 1955). Expenditure elasticities are useful here because they clearly demonstrate the portion of a 1 percent increase in food costs which is allocated to purchasing food energy and the portion which is allocated to purchase more expensive food energy.

Several points can be made following examination of table 2. Specifically,

1. For the food stamp program eligible sample population of the 1977-78 NFCS, out of a hypothetical 10 percent increase in weekly per capita household income, on average:
    - "Not sufficient" food households were estimated to increase at home food expenditures per 21 MEP by about 2 percentage points. "Marginally sufficient" food households increasedsuch expenditures by a little over one (1.2) percentage point. "Fully sufficient" food households increased at home food expenditures per 21 MEP by only two-tenths (.2) of a percentage point.
    - "Not sufficient" food households increased at home consumption of food energy per 21 MEP by about 1.2 percentage points. "Marginally sufficient" food households increased such food energy consumption by about four-tenths (0.4) of a percentage point, while "fully sufficient" food households did not increase their food energy consumption at all.
2. Out of a hypothetical 10 percent increase in weekly at home food costs (or expenditures) per 21 MEP, on average:
    - "Not sufficient" food households increased the amount of at home consumption of food energy per 21 MEP by about 6.3 percentage points; "Marginally sufficient" food households increased such consumption by about 3.3 percentage points, while "fully sufficient" food households did not increase their consumption of at home food energy per 21 MEP at all.
    - "Not sufficient" food households increased the price they paid for food energy by about 3.7 percentage points, by buying more expensive sources of food energy; "marginally sufficient" food households increased that price by 6.7 percentage points, and "fully sufficient" food

households spent all of the increase in food expenditures on buying the same amount of food energy but from more expensive sources.

- In practical and dollar terms, out of a one dollar (or approximately 2 percent) increase in weekly at home food expenditures per 21 MEP, "not sufficient" food households would spend 63 cents on buying more food energy and 37 cents on buying more expensive sources of food energy; "marginally sufficient" food households would spend about 33 cents on buying more food energy and 67 cents on buying more expensive sources of food energy; and "fully sufficient" food households would spend the entire one dollar increase on more expensive sources of food energy.

Because households may assign themselves into a food sufficiency category according to some factor(s) unavailable in the data set, a test for selectivity bias was performed using a two stage method in a switching regressions framework (Maddala, 1983, pp. 223-228; Nelson, 1984). The selectivity variable coefficients were not significant. All of the selectivity adjusted estimated income elasticities corroborated and enhanced the previously estimated elasticity differences among the three food sufficiency groups. As the results based on no selectivity adjustment were more conservative they were discussed here.

Finally, additional analyses of the total NFCS and food stamp eligible samples using the semi log functional form resulted in similar findings. With the possible exception of the selectivity bias adjusted estimated elasticities, these estimates are quite robust.

Conclusions

The results of this exploratory analysis suggest that food stamp program eligible households in the 1977-78 NFCS survey reporting their food supply as not sufficient were estimated to adjust their food energy consumption behavior more drastically in response to a small change in income than did households describing their food supply as marginally or fully sufficient. This finding is important for two reasons. First, the study shows that self-reported household food sufficiency could be an accurate measure of true food sufficiency, although its validity is not assured by this study. A second point, not previously discussed, is that, in the 1977-78 NFCS the food sufficiency question was asked after questions pertaining to food assistance program participation. This might have biased the household's reported food sufficiency status toward the "not sufficient food" category. Since data on household food use were collected at the beginning of the interview, the results of the study suggest that, on average, the placement of the food sufficiency question on the questionnaire did not result in substantial biases toward the not sufficient food category.

Presently, a similar analysis is under way using the recently released Household Portion of the 1987-88 NFCS. Preliminary results support these conclusions. However, more research is needed from the perspectives of several disciplines on the potential of self-reported food sufficiency as an accurate indicator of true food sufficiency before it can be used with confidence.

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An Analysis of a Food Demand System for the United States

Hwang-Jaw Lee, Tunghai University, Taiwan[1]
Wen S. Chern, The Ohio State University, Columbus[2]

This study provides estimates of a complete demand elasticities matrix for 19 food categories in the United States, using the linear approximate almost ideal demand system (LA/AIDS). Estimation is based on monthly data created from household data in the BLS's consumer expenditure diary surveys during 1980-1986. Among other findings, demand for milk is shown to be elastic with respect to price and inelastic with respect to total food expenditure; it is positively related to household size but negatively related to age of household. The estimated compensated cross-price elasticities are used to analyze substitution patterns among food items for at home and away from home consumption.

Introduction

Consumer demand for food is a critical component in the economic analysis of agricultural policies and social welfare programs. Understanding the structure and pattern of food consumption is essential for designing and assessing food and agricultural programs and policies. For example, the estimated price and income elasticities of food demand provide important information for assessing the impacts of government price support, income maintenance programs, and the food stamp program. Other policy areas in which the estimated demand elasticities and projection of consumer demand could be useful include structural analysis and strategic planning by the food industry.

Demographic and socio-economic characteristics of the U.S. population which may affect food consumption have changed significantly in recent years. The important changes include the declining rate of growth of population, the composition of age, and size of households, the increasing labor force participation of women, and the racial mix of the population. In addition, increasing nutrition and health concerns may have, as claimed by many researchers, changed food consumption patterns in the U.S.. These claims have been based on the fact that there have been substantial decreases in per capita consumption of red meat and eggs during the last two decades. These and other changes in food consumption pattern have major implications for the food industry, especially if these changes continue into the future.

The purpose of this paper is to apply the LA/AIDS to analyzing the demand for food commodities in the United States. The outline of the paper is as follows. Data sources and data construction are first described. A flexible demand system of the PIGLOG type is specified and demand parameters are estimated. Finally, the key estimated elasticities of 19 food categories are presented.

Data Sources

Three major components in any demand model include expenditure, prices, and socioeconomic (and/or demographic) variables. The characteristics of available data series for these three components and the consistency of these data series are important for ensuring the accuracy of parameter estimates. The data used in this study is obtained from the Consumer Expenditure Surveys (CES), conducted by the Bureau of Labor Statistics (BLS) of the U.S. Department of Labor. The CES provides the most consistent set of data for the three components needed in a demand analysis. Specifically, expenditure and demographic data are obtained directly from the BLS's Consumer Expenditure Surveys while the price data are the consumer price indexes (CPI) published by the BLS. The CPI has been computed using the expenditure weights obtained from the CES. In this study, we use data from the diary survey. The sample period covers seven years from 1980 to 1986.

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[1] Associate Professor, Institute of Graduate Studies in Business Administration.

[2] Professor, Department of Agricultural Economics and Rural Sociology.

The 19 food expenditure categories are: (1) cereal and cereal products, (2) bakery products, (3) beef, (4) pork, (5) other meats, (6) poultry, (7) fish and seafood, (8) eggs, (9) fresh milk and cream, (10) other dairy products, (11) fresh fruits, (12) fresh vegetables, (13) processed fruits, (14) processed vegetables, (15) sugar and other sweets, (16) nonalcoholic beverages, (17) fats and oils, (18) miscellaneous foods, and (19) food away from home.

In order to capture more price variation for estimation, we create and use monthly data as the observation unit. Precisely, monthly expenditure data were generated as weighted averages from household data month by month. In the diary survey, there are typically more than 800 households available each month. Prices of various food categories are obtained from the CPI Detailed Report which are published monthly by the BLS. The price data are seasonally unadjusted series of the monthly CPI-U, which were computed from U.S. city average, for all urban consumers. The X-11 procedure (available in the computer software, SAS/ETS) which is an adaptation of the Bureau of Census X-11 seasonal adjustment program, is used to seasonally adjust our original monthly unadjusted data series of expenditures and prices.

Specification of a PIGLOG Demand System

For empirical estimation of demand parameters, an explicit functional form needs to be determined a priori. A flexible function form is preferable for this study. The primary reason for using a flexible functional form is that the underlying preference function has enough free parameters to be able to approximate an arbitrary, continuous, twice-differentiable preference function to the second order, and thus it permits inference without prior constraints on demand elasticities.

Many alternative flexible demand systems have been developed and estimated in the literature. The results of a model specification test suggest that the PIGLOG demand system is likely to be most appropriate for this study. (Note that the test results are reported elsewhere in Lee, 1990.) Therefore, a PIGLOG demand model is adopted. Denote P_i as the price of ith commodity, M as total food expenditure, W_i as the expenditure share of ith commodity. Following Lewbel (1989), the model in budget share form can be expressed as:

$$\begin{aligned} W_i = {} & [a_i + c_i'V + b_i(d + a'V + 0.5V'cV) \\ & -(c_i l + b_i(1 + V'cl))Z]/(1 + V'cl) \end{aligned} \tag{1}$$

where a and b are vectors, d is a scale, c is a symmetric matrix, l is a vector of ones; V is a n-vector with component of v_i and $v_i = \log(p_i)$; and $Z = \log(M)$. The adding-up, homogeneity and symmetric conditions require that $a'l = 0$, $b'l = 0$, and $l'cl = 0$.

Lewbel (1989) shows that these budget shares are derived from the following indirect utility function in log form:

$$\begin{aligned} \log(U(V,Z)) = {} & b'V \\ & + \log(d + a'V + 0.5V'cV \\ & -(a'l + V'cl)Z) \end{aligned} \tag{2}$$

It is noted that two widely known PIGLOG models, translog demand system (TL) and almost ideal demand system (AIDS), are nested within Eq. (1) as special cases. Specifically, the restriction $b_i = 0$ for all i reduces the system to the exactly aggregatable translog model, whereas the restriction

$c_i'l=0$ for all i leads to the AIDS model. These restrictions can be tested to assess the adequacy and relative explanatory power of the AIDS and TL for a particular data base.

For empirical applications, the AIDS has often been estimated using a simple linear approximation to avoid nonlinearity of the system (see, e.g. Deaton and Muellbauer 1980). This approximation essentially amounts to replacing the term $d+a'V+0.5V'cV$ in Eq. (1) with some mechanical price index such as the Stone index defined as $\log P^* = \sum w_{jt}\log(p_{jt})$. Deaton and Muellbauer (1980) note that in most cases the approximation is fairly close, particularly if wide variations in prices do not occur in the sample period. Anderson and Blundell (1983) also provide evidence that the use of a Stone index has little effect on the value of the log likelihood function. Other studies have noted similar results especially in the area of food demand estimation Blanciforti, et al. (1986).

An initial attempt was made to estimate the original version of the Lewbel's general form and AIDS. But this formulation failed to converge after 300 iterations. Consequently, we follow others in using the Stone index as an approximation to the term, $d+a'V+0.5V'cV$, in the original specification. In order to avoid the simultaneity problem, Stone's index is computed by using the lagged budget shares as suggested by Eales and Unnevehr (1988), that is, $V^* = \log P^* = \sum w_{j,t-1}p_{j,t}$.

In order to incorporate the impacts of demographic variables into the system, we follow a demographic translating procedure developed by Pollak and Wales (1981). Accordingly, the parameters a_i are specified as a linear function of the household characteristics variables, D_h:

$$a_i = a_{i0} + \sum_h a_{ih} D_h \qquad (3)$$

Two demographic variables, household size and age of household head, are considered in this analysis. The other demographic variables can not be averaged across households on a monthly basis.

Many researchers argue that demand models should incorporate or test for dynamic behavior of consumers. In fact, several previous demand studies including Blanciforti, et al. (1986) and Yen and Chern (1992), have shown that a dynamic form of a demand system provides a better approximation to consumer behavior than a static formulation. The dynamics are often assumed to reflect persistence in consumption pattern and to capture the changes in taste over time. Several alternative approaches have been used to incorporate dynamic factors of consumer behavior into model specification (see, Johnson et al. 1984). In this study, a lagged quantity variable (Q_{t-1}) is included to capture the impacts of persistence in consumption pattern and/or changes in taste over time.

Consequently, using Stone's index and incorporating the demographic variables as well as the dynamic specification, the share equations, Eq. (1), can be extended and expressed as:

$$\begin{aligned} W_i = [&a_{i0} + a_{i1}Q_{t-1} + a_{i2}D_1 + a_{i3}D_2 \\ &+ b_iV^* + c_i'V - (c_il \\ &+ b_i(1 + V'cl))Z][1 + V'cl]^{-1} \end{aligned} \qquad (4)$$

where V^* is Stone's index. The adding-up restriction requires that $\sum a_{i0}=1$; $\sum a_{i1}=0$; $\sum a_{i2}=0$; and $\sum a_{i3}=0$. Eq. (4) is termed the Lewbel's full model or simply the full model in this study.

Preliminary estimation of Eq. (4) for 19 food commodities in one stage reveals that the system is too large to handle. It would be an unmanageable task to estimate the full model due to nonlinearity in estimation. The only possibility for estimation of a system for 19 commodities in one stage is to restrict $c'l=0$ to avoid the troublesome problems associated with nonlinear estimation. This imposition of $c'l=0$ in the Eq. (4) reduces the model to a linear approximation AIDS (LA/AIDS). This restricted version of Eq. (4) can then be rewritten as:

Alternatively, one may aggregate 19 food groups to form fewer subgroups such as meat, poultry and fish and estimate a two stage model. This

$$w_i = a_{i0} + a_{i1}Q_{t-1} + a_{i2}D_1 + a_{i3}D_2 + \sum_j c_{ij}v_j + b_i(Z - V^*) \qquad (5)$$

approach was implemented and the full model was estimated. The results of this alternative approach were presented elsewhere in Lee (1990).

For empirical estimation, a disturbance term (ξ_t) is added to Eq. (5) to obtain a stochastic form for an aggregate PIGLOG demand system. To allow for serially correlated errors, we further specify the error structure following the first-order autoregressive scheme, that is, $\xi_t = \rho\xi_{t-1} + \varepsilon_t$, $t=2,3,\ldots,T$.

Key Elasticities for 19 Food Categories

The estimation results from the LA/AIDS demand system for 19 food categories under the one stage structure appear in this section. Note that a dummy variable is included in the model to take into account the observations causing the violation with generalized axioms of revealed preference (GARP) in a nonparametric testing. Specifically, we define D as a dummy variable having a value of one for the months of May 1981, June 1982, June 1984, and April 1985, and zero otherwise. This variable is added to Eq. (5) with a parameter a_{i4} ($\Sigma a_{i4} = o$) .

One of the main objectives of a parametric demand analysis is to summarize the observed data by important demand elasticities. It is therefore important to compute and evaluate own-price, cross-price, and expenditure elasticities, and the elasticities for family size and age of household head. All elasticities presented in this section are computed using the estimated structural parameters and sample means of the associated variables. In order to save space, the regression results using structural parameters are not presented in this paper.

The estimated elasticities are presented in Table 1. Several interesting findings from these results are summarized below:

(1) Most of the food categories have an expected negative sign for uncompensated own-price elasticities with the exception of beef, and fats and oils. The difficulty in estimating the own-price elasticities for beef and fats and oils is that the prices of beef and fats/oils remain relatively unchanged during the sample period of 1980-86. We found that the estimated price elasticity of beef has the expected negative sign only when we included an additional time trend variable in the model.

(2) Among 19 categories, cereal, other meats, milk, fresh fruits, processed fruits, sweets, and nonalcoholic beverages are all price elastic while eggs and the food away from home categories show a relatively low price responsiveness.

(3) Consider expenditure elasticity, the results show that the range of expenditure elasticities is relatively small, from 0.66 for seafood to 1.14 for sweets. In particular, cereal, bakery, eggs, fresh vegetables, fresh fruits, processed vegetables and nonalcoholic beverages have approximately unitary expenditure elasticities.

(4) Estimated elasticities for family size are positive for most of the food categories. Among the 19 food commodities, beef, pork, processed vegetables and miscellaneous foods appear to have a higher family size elasticity than other food commodities.

(5) Food away from home is the only category with a strong negative elasticity of family size. This can be logically explained by household production theory. The larger the family size, the more likely household would consume food at home, perhaps, due to the economies of scale in food preparation at home.

(6) Six commodities, i.e., beef, other meats, milk, fresh vegetables, sweets, and fats and oils, have negative estimated elasticities for age of household head. These results indicate that a 1% increase in the age of household head would decrease the quantities of beef, other meats, milk demanded by 1.49%, 0.40%, and 0.19%, respectively. Among the 19 food commodities, beef has the largest negative elasticity with respect to the age of household head. This result suggest that older consumers eat less beef than younger

people.

(7) Poultry and seafood appear to have strong positive age elasticities. This may be due to the fact that elderly families tend to have more health concerns than younger families.

Many previous demand system studies concentrated only on the estimation of own-price and expenditure elasticities and paid little attention to interdependent relationships among commodities in the system. One possible reason for this lack of attention is that it is very difficult to evaluate the plausibility of the estimated cross-price elasticities. Theoretically, the cross-price elasticities can be positive or negative. There are no expected signs. However, one main merit of a system approach is to permit us to systematically analyze the substitutability and complementarity among commodities in the system. Formulating a complete elasticities matrix will be useful for analyzing food consumption pattern and consumer behavior.

Table 2 presents the compensated price elasticities for 19 food commodities. The compensated price elasticities are computed from uncompensated price elasticities, expenditure elasticities and budget shares. The definition of substitutability and complementarity in the Hicksian sense is based on the sign of the total compensated substitution effect including specific and general cross-price effects for a given level of utility. If a compensated cross-price elasticity, η^*_{ij}, is positive, then a rise in the absolute price of j-th commodity would cause consumption of i-th commodity to increase, holding utility constant. Accordingly, goods i and j are said to be Hicksian substitutes (complements) if $\eta^*_{ij} > 0$ (<0).

The main findings from the estimated compensated price elasticities for the 19 commodities are summarized as follows:

(1) Cereal has strong substitute relationships with other meats (1.94), seafood (1.25), and dairy products (1.49) and has a complementary relationship with milk (-2.95).

(2) Bakery products appear to have fairly weak relationships with other commodities in the system. The compensated cross-price elasticities range from 0.4 with respect to food away from home to -0.07 with seafood.

(3) Among three red meats, the estimates of compensated cross-price effects show that they are substitutes. For instance, quantity demanded for beef would increase by 0.15% for a 1% increase in pork price, and by 0.35% resulting from a 1% increase in the price of other meats. Pork quantity demanded would increase by 0.27% and 0.60%, respectively, due to a 1% increase in the prices of beef and other meats. In addition, a 1% increase in the price of beef and pork could result in increases in the quantity demanded for other meats by 0.89% and 0.87%, respectively.

(4) Poultry is found to be a substitute for beef, pork, and seafood but a complement for other meats. The results also show that poultry and dairy products have a relatively strong complementarity relationship and, similarly, poultry and food away from home.

(5) Seafood has a negative compensated cross-price elasticity with respect to beef and pork, indicating complementarity with these two red meat products, but seafood is a substitute for other meats. We also observe that the relationships between seafood and cereal, as well as between seafood and milk, dairy products, and food away from home indicate they are substitutes. A 1% increase in the prices of food away from home and or of cereal would result in 1.51% and 1.71% increases, respectively, of the quantity demanded of seafood.

(6) Eggs and milk, as well as eggs and other dairy products are found to be substitutes, but eggs and food away from home are complements. Cross-price estimates between eggs and beef, other meats, poultry, seafood do not show significant interdependent relationships.

(7) The cross-price elasticities from milk and dairy products indicate that the two commodities are substitutes. The relationship between milk and cereal, as well as relationships between milk and food away from home indicates they are strong complements. The results also indicate that the dairy products group has significant interdependent

relationships with cereal, red meats, poultry, miscellaneous foods, and food away from home.

(8) In general, fresh fruits and fresh vegetables do not exhibit strong cross-price elastic relationships with other commodities except for miscellaneous foods and food away from home.

(9) The magnitudes of cross-price elasticities indicate a strong substitution effect between processed fruits and cereal, as well as other processed fruits and meats, milk, and food away from home. Complementarity relationships between processed fruits and nonalcoholic beverages as well as miscellaneous foods are also observed.

(10) The cross-price elasticities among processed vegetables, sweets, nonalcoholic beverages, fats and oils, and miscellaneous foods indicate the following pairs of commodities having strong substitution relationships: processed vegetables and dairy products; processed vegetables and miscellaneous foods; sweets and beef; sweets and nonalcoholic beverage; oils and milk; and oils and miscellaneous foods. The pairs found to be are complements: sweets and milk; sweets and food away from home; nonalcoholic beverages and sweets; oils and food away from home; miscellaneous foods and dairy products; miscellaneous foods and food away from home.

(11) The estimated cross-price elasticities for food away from home do not show significant interdependent relationships with other commodities in the system.

Conclusions

In this study, we attempted to use Lewbel's full demand system which nests translog and AIDS model as special cases. Unfortunately, the full model could not be estimated for 19 food groups in one step because of convergency problems. Therefore, the LA/AIDS system was estimated and reported upon in this paper. The full model was estimated using a two-stage budgeting procedure. The results are reported elsewhere.

The empirical estimation is based on monthly time-series data created from the LBS's CES household data from 1980 to 1986. The estimated own-price, expenditure, and cross-price elasticities are presented for 19 food categories. The estimated own-price elasticities are all plausible except for beef and fats and oils. Apparently, insufficient variation in prices during the sample period has caused the difficulty in estimating own-price elasticity for these two products. The results show that demand for cereals, seafood, other meats, milk, fresh fruits, processed fruits, processed fruits, sweets, and nonalcoholic beverages is very price elastic.

The results also show that income effects are strong for food away from home and several food categories for at home consumption. Furthermore, household size is found to have a negative effect on food away from home. Therefore, declining household size may have contributed to the growth of the demand for food away from home during the sample years and even in the 1970s.

This study also provides a complete matrix of compensated price elasticities. These cross-price elasticities can be used to make inferences about substitutability and complementarity between food items. These relationships may be useful for an understanding of consumer food consumption behavior in the United States.

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Table 1
Estimated Elasticities of 19 Food Categories.

Item	Own Price	Expenditure	Household Size	Age[a]
Cereal	-2.19	0.97	0.25	0.08
Bakery	-0.89	1.00	0.01	0.18
Beef	0.24	0.72	0.63	-1.49
Pork	-0.64	1.05	0.50	0.10
Other Meats	-2.74	0.86	0.22	-0.40
Poultry	-0.42	1.17	-0.03	0.67
Seafood	-2.14	0.51	0.26	0.72
Eggs	-0.17	1.04	-0.03	0.45
Milk	-0.99	0.79	0.20	-0.19
Other Dairy	-0.60	0.77	-0.02	0.12
Fresh Fruit	-1.05	0.95	0.00	0.24
Fresh Vegetables	-0.71	1.01	0.39	-0.17
Processed Fruits	-1.99	1.06	0.25	0.48
Processed Vegetables	-0.75	1.00	0.47	0.15
Sweets	-1.43	1.28	0.41	-0.15
Nonalcoholic Beverages	-1.18	1.04	0.00	0.33
Fats & Oils	0.10	0.83	0.20	-0.08
Misc. Foods	-0.80	1.14	0.47	0.06
FAFH[b]	-0.39	1.08	-0.47	0.09

[a] Age = age of household head.
[b] FAFH = food away from home.

Table 2

Compensated Price Elasticities Matrix for 19 Food Commodities.

Food Group		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
		Prices of Food Commodities																		
Cereal	(1)	-2.16	0.10	0.21	-0.36	1.94	0.38	1.25	0.09	-2.95	1.49	0.13	0.13	-0.30	0.34	0.05	0.12	0.17	0.04	0.29
Bakery	(2)	0.05	-0.83	0.05	-0.02	-0.05	0.02	-0.07	0.02	0.03	0.01	0.07	-0.05	0.02	0.06	0.09	0.07	0.04	0.08	0.40
Beef	(3)	0.08	0.05	0.30	0.15	0.35	0.07	-0.06	-0.00	-0.03	-0.48	-0.14	0.14	0.16	0.12	0.60	-0.58	-0.07	0.13	-0.76
Pork	(4)	-0.25	-0.04	0.27	-0.60	0.60	0.29	-0.07	0.12	-0.33	0.73	0.27	-0.03	-0.07	0.01	-0.31	-0.23	0.04	0.59	-1.00
Other meats	(5)	1.95	-0.10	0.89	0.87	-2.72	-0.17	0.17	0.05	1.69	-1.07	0.05	0.12	-0.45	-0.08	-0.71	0.41	0.38	-0.45	-0.84
Poultry	(6)	0.38	0.14	0.19	0.42	-0.18	-0.39	0.36	0.02	0.46	-1.11	0.14	-0.14	-0.13	0.41	0.35	0.06	0.37	-0.54	-0.71
Seafood	(7)	1.70	-0.20	-0.22	-0.13	0.23	0.48	-2.13	-0.06	1.00	0.46	0.27	-0.23	-0.68	-0.25	-0.73	-0.32	-0.23	-0.46	1.51
Eggs	(8)	0.22	0.12	-0.03	0.44	0.11	0.05	-0.12	-0.15	0.50	0.89	0.11	-0.08	-0.08	0.15	-0.43	-0.04	0.03	0.28	-1.97
Milk	(9)	-1.93	0.04	-0.06	-0.32	1.11	0.30	0.48	0.13	-1.51	2.09	0.22	0.06	0.54	-0.03	-0.77	0.57	-0.17	0.28	-1.05
Dairy products	(10)	0.97	0.02	-0.81	0.69	-0.70	-0.72	0.22	0.23	2.09	-0.56	0.25	0.10	0.09	0.32	0.13	-0.35	-0.05	-3.50	1.57
Fresh fruits	(11)	0.13	0.13	-0.30	0.34	0.05	0.12	0.17	0.04	0.29	0.34	-1.02	-0.01	0.13	0.10	-0.31	-0.12	0.01	0.62	-0.71
Fresh vegetables (12)	0.00	-0.09	0.32	-0.04	0.11	-0.13	-0.15	-0.03	0.09	0.14	-0.01	-0.68	-0.08	0.09	-0.23	0.03	0.02	0.29	0.37	
Pro. fruits	(13)	1.62	0.05	0.48	0.33	1.74	-0.15	-0.58	-0.04	0.96	0.16	0.17	-0.11	-1.96	0.30	-0.29	-1.00	0.33	-1.20	1.91
Pro. vegetables	(14)	-0.90	0.20	0.46	0.02	-0.13	0.63	-0.29	0.10	-0.06	0.76	0.19	0.16	0.40	-0.73	-0.34	-0.04	-0.58	0.55	-0.38
Sweets	(15)	-0.91	0.22	1.80	-0.52	-0.83	0.40	-0.63	-0.20	-1.38	0.24	-0.41	-0.30	-0.30	-0.25	-1.40	2.63	0.04	-0.92	-2.73
Nonalcoholic beverages	(16)	0.44	0.08	-0.71	-0.16	0.19	0.03	-0.11	-0.01	0.42	-0.26	-0.07	0.02	-0.41	-0.01	1.08	-1.12	-0.00	0.62	-0.02
Fats & oils	(17)	-0.15	0.12	-0.30	0.10	0.60	0.58	-0.27	-0.60	1.40	-0.12	0.02	0.03	0.45	-0.58	0.06	-0.00	0.11	2.41	-2.66
Misc. foods	(18)	0.33	0.07	0.13	0.35	-0.18	-0.22	-0.14	0.05	0.18	-2.16	0.29	0.13	-0.42	0.14	-0.32	0.53	0.62	-0.72	-1.34
FAFH	(19)	-0.15	0.07	-0.16	-0.12	-0.07	-0.06	0.09	-0.06	-0.13	0.19	-0.07	0.03	0.13	-0.02	0.19	-0.00	-0.14	0.27	-0.01

Aggregate Consumption and Economic Behavior

David Bunting, Eastern Washington University, WA[1]

Because aggregate variables are weighted averages, aggregate consumption theories actually represent household behavior on the basis of their relative shares of spending and income. Since these shares are unequally distributed, the theories are biased towards high income and against low income households. Using BLS cross sectional data, consumption functions are estimated with controls for distributional and transitory influences. Results strongly suggest that aggregate behavior is time invariant and, when appropriately specified, household and historic models yield similar descriptions of spending behavior.

Historic and Household Consumption

After Keynes' (1936) original formulation, perhaps the pivotal event in studies of aggregate consumption was the finding that spending behavior seemed to depend on how spending was measured, that is, marginal propensities to consume estimated from long run historical data were significantly larger than those found using cross sectional household survey data (Thomas, 1989; Spanos, 1989). Efforts to explain these inconsistent results led researchers away from Keynes' notion that current consumption depended on current income and towards the idea that spending depended on income derived over a longer period of time, usually as the present value of past or future income (Brumberg and Modigliani, 1954; Friedman, 1957).

While the proper theory of consumption has yet to be resolved, differences between long run and cross sectional marginal propensities to consume are actually based on a fundamental misperception. Following the empirical work of Kuznets (1946) and Friedman (1957) using national income data, the historic consumption function is usually expressed as a constant function of income:

(1) $C_t = kY_t$; where $t = 1 \ldots m$ years.

On the other hand, household consumption functions derived from cross sectional data uniformly indicate that low income households dissave and high income ones save, implying a function with a positive intercept (Friedman, 1957):

(2) $c_i = a_i + b_i y_i$; where $i = 1 \ldots n$ households

Although these functional forms seem to describe different types of spending behavior (hence concern about the proper theory of consumption), they are actually related through aggregate consumption. In any year, aggregate consumption is the sum of individual household spending,

(3) $C_t = c_1 + \ldots + c_n$

By substitution,

(4) $C_t = a_1 + b_1 y_1 + \ldots + a_n + b_n y_n$.

Multiplying and dividing each right hand side component by Y_t and setting each household's relative share of income y_i/Y_t equal to w_i, then

(5) $C_t = a_1 + \ldots + a_n + b_1 w_1 Y_t + \ldots + b_n w_n Y_t$; with $\Sigma w_i = 1$;

$= \Sigma a_i + \Sigma b_i w_i Y_t$.

This implies that the historic MPC equals the income weighted average of the household mpcs,

(6) $k = \Sigma b_i w_i$

and that the simple regression of household consumption on household income is irrelevant when comparing household and historic spending behavior.

For example, suppose in some year the economy is composed of two households with consumption and income as follows:

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[1] Professor
Department of Economics

	c_i	y_i	b_i	w_i	b_iw_i
Household A	30	20	1.50	.20	.30
Household B	60	80	.75	.80	.60
Total	90	100	.90	1.00	.90

Total spending and income of both households produces the familiar historic consumption function, $C = .9Y$ while cross sectional spending implies a household consumption function, $c = 20 + .5y$. Plots of these two functions will show the familiar long run/cross sectional dichotomy of sharply different household and total average propensities.

Now suppose consumption and income change as follows:

	c_i	y_i	b_i	w_i	b_iw_i
Household A	156	80	1.95	.40	.78
Household B	24	120	.20	.60	.12
Total	180	200	.90	1.00	.90

This does not alter the historic consumption function but now the household function becomes $c=420 - 3.3y$. Clearly cross sectional and long run spending behavior are not directly related. A stable historic consumption function is consistent with any type of household spending; distinctions between behavior implied by one function with that implied by the other are meaningless.

Representative Behavior

While dichotomous behavior is not necessary to explain long run and cross sectional spending differences, nonetheless the idea that households spend according to permanent or life-cycle measures of income dominate modern theories of aggregate consumption.[1] By their specification, these theories ignore cross sectional data and rely on historic data for calibration and validation. Since aggregate data is compiled by summing across all households, it represents total rather than "typical" or "average" behavior. To model individual behavior, a theoretical construct is utilized in which "the totality of various individual households (is) treated as if it were a single 'representative' household" (Intriligator, 1978: 235). Although the representative concept is exceedingly convenient by permitting single observations to represent millions of households, it fundamentally alters the meaning of economic behavior.

In any year, aggregate income is simply the sum of individual income,

(7) $Y_t = y_1+\dots+y_n.$

Multiplying and dividing the right hand side through by Y_t and setting $y_i/Y_t=w_i$, as before,

(8) $Y_t = w_1Y_t+\dots+w_ny_t$, where $\Sigma w_i = 1$.

Aggregate income is a weighted average of the income of individual households and since the same conclusion applies to aggregate consumption by similar argument, the representative theories actually represent the behavior of households on the basis of their relative shares of spending and income. Since neither are equally distributed, these theories are biased towards the activities of high income households and against those of low income ones.

Table 1
Distribution of Consumption, Income & Households by Income Level

Income Level	1980-81			1986-87		
	%C	%Y	%Hd	%C	%Y	%Hd
< 5000	6.5	2.0	14.4	5.3	1.0	10.8
5-10,000	10.0	6.7	16.2	8.0	4.7	15.7
10-15,000	11.4	9.6	14.7	8.7	6.3	12.7
15-20,000	12.3	11.8	13.0	8.3	7.0	10.3
20-30,000	24.9	26.2	21.4	17.0	16.1	17.1
30-40,000	16.8	19.3	11.5	15.3	16.5	12.7
40,000+	18.1	24.5	8.9	37.5	48.5	20.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

Table 1 shows the relative distribution of consumption, income and households by income level from combined Consumer Expenditure Surveys conducted in 1980-81 and 1986-87 by the Bureau of Labor Statistics (1986,1990). Income, from all sources, is net of personal taxes while consumption includes all expenditures net of all nonhealth insurance, retirement and social security contributions. In 1980, about 42 percent of the households accounted for 70 percent of income and 60 percent of consumption; in 1986, 33 percent accounted for 65 percent of income and 53 percent of consumption. These percentages, reflecting well-known distribution figures going back fifty years (Bureau of Census, 1989), clearly indicate that long run aggregate consumption theories do not represent "average" behavior in the sense of mean behavior.

The fact that aggregate measures of household behavior are unequally distributed among households has important implications. Programs formulated on the basis of multipliers and coefficients estimated with aggregate data could have unexpected results unless their prescriptions follow the prevailing distributions of the data from which they are derived. For example, in the first simple example discussed above, assuming equal average and marginal propensities, the historic consumption function suggests an income increase of 10 would increase consumption by 9. This implicitly assumes the increase follows the prevailing distribution of income with household A receiving 20 percent and B getting 80 percent. If the increase went entirely to A, consumption would rise by 15 while if it went to B, it would rise by 7.5. Thus, depending on how changes in income are distributed, changes in consumption could vary by 100 percent.

Transitory Behavior

In modern consumption function research, cross sectional survey data has been largely ignored because it produced results different than those from historical studies. Households are thought to have a smooth spending plan (c), derived from long run expected or permanent income(y_e). This plan implies a stable historic spending ratio b and that $c/y_m=b$. However, unanticipated events sometimes cause measured or income actually received (y_m) to deviate from its expected value by some temporary or transitory amount (Y_t). The situations where $Y_t \neq 0$ imply that $c/y_m \neq b$ because $y_m=y_e+y_t$. In other words, spending ratios differ across households because transitory incomes differ rather than because of different responses to income size and level. Since survey data includes different types of income which invoke different types of spending behavior, it should not be used to estimate consumption functions.

The rejection of entire datasets because some individual spending ratios reflect transitory situations seems extreme. A more reasonable procedure entails establishing a range within which differences between measured and expected income can be considered unimportant. Households with apcs outside this range must be experiencing transitory income and can be controlled for in some manner when estimating a consumption function. This approach was not used by early researchers because they relied on grouped survey data which contained, at most, a dozen or so observations,[2] thereby making data adjustments impracticable or impossible (Bunting, 1989).

Household Spending Behavior

Before making decisions regarding intertemporal spending, households first have to resolve their intratemporal problem of choosing between consumption and saving. In the latter decision, they are constrained by income, $y = c + s$, and the desire to avoid death or deprivation, $c \geq a$, where a represents some minimal acceptable standard of living. For all households, these two constraints imply a Keynesian consumption function, $c_i = a + by_i$. At low levels of income, consumption will be some constant amount while at higher levels, households, not pressured by basic survival motives, can choose between spending or not according to the utility derived from each activity. Most likely the income consumption curve between consumption and saving is not linear as implied in the intertemporal analysis. Rather, at low incomes, savings is a luxury activity and consumption a necessity while at higher levels consumption becomes more like an inferior good and savings more a normal one.

Questions about choosing between saving and consumption in an intratemporal context as well as defining an "acceptable standard of living" involve a number of complex issues. Saving motives largely depend on the amount to be saved and the income of the saver. Low and middle income households probably save for the same reasons they demand money, for transactions and precautionary purposes. Reserves must be established for future obligations as well as for unanticipated expenditures. Additionally, there might be some saving to speculate on turns in the interest rate but the households involved are likely few. Higher income households might save for future earnings, an intertemporal reason, but following the law of variable proportions where consumption is increased against a fixed capacity to consume, savings would occur even at a zero interest rate.

As income falls to low levels, rather than allowing some fixed historic spending ratio to drive consumption to zero and themselves to death, households dissave. Dissaving should not be considered a minor activity or theoretical construct. During the 1980s more than 40 percent of households spent more than their current income (Bunting, 1991). This high percentage, which is consistent with expenditure survey results reaching back to the 1870s (Bureau of Census, 1975 (1): 320-328), indicates a strong survival instinct among all households.[3] While households do not follow a "death wish," precise delineation of an "acceptable standard of living" is difficult. Most likely the amount varies by income level, that is, what is acceptable at a low income level is different, and less, than that acceptable at a higher level. In other words, for some "rice and beans" is acceptable while for others "caviar and champagne" is necessary.

Data and Results

Two different BLS Consumer Expenditure Surveys are used to estimate household consumption functions. As national probability samples of household income and expenditure behavior, these surveys form the basis for determination and rebasing of the Consumer Price Index. The first survey, conducted in 1960 and 1961 contains responses from over 12,000 urban and rural households while the second, reflecting a shift from periodic annual to continuous quarterly surveys, was constructed from 1984 quarterly surveys. It includes annualized data for households for which at least one quarter of both income and expenditure data were available, about 9400 observations in total.

In each survey, household income includes, after deduction of personal federal, state and other taxes, total money earnings, social security and retirement income, interest and dividends, unemployment and worker's compensation, public assistance and food stamps, regular contributions for support and other income. Consumption expenditures include all forms of spending, including household durables, net outlays (cost minus trade) for new or used vehicles or boats, mortgage interest (not principal), gifts, cash contributions and so on. Excluded from spending are contributions for social security, retirement pensions and life insurance (Bureau of Labor Statistics, 1971; 1986b).

To provide a basis of comparison, the traditional household model, $c_i=c(y_i)$, was first estimated in linear form using ordinary least squares and then reestimated after removing households with consumption or income less than or equal zero.[4] The results shown in Table 2 are consistent with existing estimates in that both the mpcs and fraction of explained variation are much lower than those found with historic data. The exclusion of nonpositive households, which reduced both samples by less than 1 percent, had negligible effects.

Table 2
Estimated mpcs, Original and Revised Samples.

Sample	mpc	t	N	R2
1960	.7702	219.1	13728	.7776
1960r	.7729	220.0	13680	.7796
1984	.5703	101.8	9401	.5243
1984r	.5848	106.5	9342	.5484

As indicated, the marginal propensities found in Table 2 might not accurately describe household behavior because spending could be influenced by transitory and distributional factors. To test this hypothesis households are grouped by their spending ratios and income shares. The data in Table 1 shows that about 60 percent of households, the lowest three quintiles, spend their income or more. For purposes there, these are assumed to be "low" income households while the remaining 40 percent are defined as "high" income households. Unusual swings in incomes also can influence spending. To capture this, households are divided into three groups, depending on their spending ratio. Dummy variables are used to place specific households in this two way classification scheme as follows:

$d_1 = 1$ if apc > 2.0 and in lowest three income quintiles;
$d_2 = 1$ if $0.5 \leq$ apc ≤ 2.0 and in lowest three income quintiles;
$d_3 = 1$ if apc < 0.5 and in lowest three income quintiles;
$d_4 = 1$ if apc > 2.0 and in highest two

income quintiles;
$d_5 = 1$ if $0.5 \leq apc \leq 2.0$ and in highest two incomes quintiles;
$d_6 = 1$ if $apc < 0.5$ and in highest two income quintiles.

lowest quintiles was much less (29 percent as compared to 36 percent in 1960) while those in the highest income quintiles with the lowest apcs rose from 4 to 19 percent. In both samples a majority of the income was controlled by a single group representing a minority of the households, implying that overall measures of spending behavior will strongly reflect the behavior of a minority rather than a majority of households.

The marginal propensities to consume for each group were estimated using dummy variables to reflect changes in the position of the consumption function and interactive dummy variables with income to measure the specific relationship between consumption and income (Studenmund and Cassidy, 1987: 157-165). The model tested was

$$(9)\ c_{ij} = a + \sum_{j=2}^{6} d_j + \sum_{j=1}^{3} l_j d_j y_{ij} + \sum_{j=4}^{6} h_j d_j y_{ij} + e_{ij}$$

The effect of this grouping is shown in Tables 3 and 4. In the 1960 CES about 95 percent of the households had apcs in the middle range with equal numbers showing higher and lower ratios. The distribution of households is much more disperse in the 1984 CES. Only about 75 percent had apcs in the middle range while 12 percent with high ratios are in the low income quintiles and another 8 percent have high incomes and low ratios. For the 1960 sample, the income weights show income concentrated in the middle apcs with 60 percent in the high income group. The 1984 grouping shows some interesting differences perhaps reflecting the differences in the samples. The share of income in where a is the constant term, the d_js represent intercept dummy variables, the l_js are slope coefficients for households in the lowest three quintiles and the h_js are slope coefficients for households in the highest two quintiles. Regression and weighted marginal propensities for each survey are found in Tables 5 and 6 with full regression results shown in the Appendix Table.

Overall, as the details in the Appendix show, the model fits the cross sectional survey data quite well. All slope coefficients are highly significant with t statistics ranging from 5.2 to 215.7 for the 1960 survey and from 7.0 to 132.8 for the 1984 one. The model also had high explanatory power with R^2s of .87 and .80. Most importantly, the marginal propensities are consistent with the hypothesis that transitory and distributional factors influence spending behavior. Households with high or low spending ratios had mpcs much different than those with more normal ratios and low income households uniformly had larger mpcs than those with high incomes. While these effects seem obvious, it should be remembered that they have not been considered in previous estimates of consumption behavior.

The total columns or rows, calculated using income weights, simply repeat the above conclusions on a larger scale. Most striking is the clear impact of income distribution on spending. In both samples, households with the lowest 60 percent of income had mpcs greater than 1.0 while the upper 40 percent of income had mpcs of .8 or lower. The total mpcs, an income weighted average of the six cells, were .89 for 1960 and .79 for 1984. These can be compared with the unweighted estimates of .78 and .55 found in Table 1. These results clearly show that differences between historic and household spending behavior largely disappear with relative simple adjustments in the survey data.

Because differences between "low" and "high" incomes are imprecise, the model was re-established using a number of different but representative income distributions. As the following shows, different distributions did not have much effect.

For example, the total mpcs fell only .03 when households in the lowest quintile were considered "poor" and those in the upper four "rich."

	20/80	40/60	60/40	80/20
1960	.86	.87	.89	.90
1984	.76	.78	.79	.78

Table 3

Distribution of Households and Income Weights, 1960 CES Survey

apc	Distribution of Households			Income Weights		
	Low Q	High Q	Total	Low Q	High Q	Total
apc > 2.0	.0239	.0007	.0246	.0068	.0007	.0075
0.5 ≤ apc ≤ 2.0	.5637	.3866	.9503	.3509	.6021	.9530
apc < 0.5	.0079	.0173	.0252	.0036	.0358	.0394
Total	.5955	.4016	1.0000	.3613	.6386	1.0000

Table 4

Distribution of Households and Income Weights, 1984 CES Survey

apc	Distribution of Households			Income Weights		
	Low Q	High Q	Total	Low Q	High Q	Total
apc > 2.0	.1210	.0082	.1292	.0290	.0098	.0388
0.5 ≤ apc ≤ 2.0	.4501	.3076	.7577	.2447	.5063	.7510
apc < 0.5	.0307	.0823	.1130	.0191	.1912	.2103
Total	.6018	.3981	1.0000	.2928	.7073	1.0000

Table 5

Regression and Weighted Marginal Propensities, 1960 CES Survey

apc	Low Quintiles	High Quintiles	Total
apc > 2.0	2.3202	2.1476	2.3035
0.5 ≤ apc ≤ 2.0	1.0065	.8429	.9031
apc < 0.5	.4572	.3154	.3285
Total	1.0256	.8147	.8909

Table 6

Regression and Weighted Marginal Propensities, 1984 CES Survey

apc	Low Quintiles	High Quintiles	Total
apc > 2.0	2.6339	2.3492	2.5620
0.5 ≤ apc ≤ 2.0	.9197	.7672	.8168
apc < 0.5	.3911	.3421	.3466
Total	1.0550	.6742	.7858

Tests such as these could be easily expanded by dividing households into smaller groups but this would not change the basic conclusion that spending behavior is significantly influenced by the distribution of income.

The total household mpcs, especially those for 1984, are still lower than those estimated with historic data. Reasons for this are open. The historic values could be biased in that consumption, the dependent variable, is a near constant proportion of income, the explanatory variable (Thomas, 1989; Spanos, 1989). The various household models are probably misspecified because important demographic and sociological variables like age, race, sex, education and related household characteristics are omitted (Dadashi, 1990). Data differences and variable definitions might be important. Homeowning expenditures, social security contributions and consumer unit coverage are all treated differently in the historic and household data (Rogers, 1990). But this incomplete list of differences and difficulties simply indicates the practical limitation of the theoretical notion that the aggregate marginal propensity to consume is a weighted average of individual propensities. The results found here strongly suggest that when appropriately specified, household and historic aggregate consumption function models will yield similar descriptions of spending behavior.

Appendix : Regression Results and Means

Variable	1960 CES Coefficient	1960 CES t -stat	1960 CES Mean	1984 CES Coefficient	1984 CES t-stat	1984 CES Mean
a	.04299	4.6	-----	.6648	16.8	-----
d_1	excluded	---	.0239	excluded	----	.1210
d_2	-.0378	-3.9	.5637	-.5695	-12.3	.4501
d_3	-.0478	-2.2	.0079	-.6562	- 6.3	.0307
d_4	.0133	.2	.0007	.4548	2.5	.0082
d_5	.0006	.1	.3866	-.4794	- 9.8	.3076
d_6	.0045	.3	.0173	-.4866	- 7.4	.0823
d_1y_i	2.3202	41.5	.0028	2.6339	54.6	.0634
d_2y_i	1.0065	122.2	.1449	.9197	60.9	.5352
d_3y_i	.4572	5.2	.0015	.3911	7.0	.4017
d_4y_i	2.1476	15.8	.0003	2.3492	45.8	.0214
d_5y_i	.8429	215.7	.2486	.7672	132.8	1.1075
d_6y_i	.3154	37.9	.0148	.3421	47.1	.4182
Adj R^2:	.8672			.7952		
N	13680			9342		

Note: $\Sigma d_i = 1.0000$ (relative frequency) and $\Sigma d_i y_i$ = total income/N.

Endnotes

1. In modern textbooks of macroeconomic theory, cross sectional findings simply serve as a literary device to introduce historic theories of spending behavior.

2. All cross sectional studies cited in Friedman's (1957) extensive review were based on grouped data. Brumberg and Modigliani (1954) also probably relied on results from grouped data because this was the only form survey data were published.

3. If dissavings is caused by unexpected, transitory income changes, then the high percent of dissaving households suggests high variability in household incomes. If household incomes are highly variable, then determination of permanent or lifetime income must be highly uncertain. In other words, while lifetime spending plans might be devised, the probability of following them is small.

4. Nonpositive consumption suggest some recording or classification problem while nonpositive income usually reflects the mixing of personal incomes and sole proprietorship losses. In either situation, since reasons for the unusual figures could not be deduced from the original data the observations were excluded.

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Optimization Models as a Basis for Prescriptive Consumer Economics

Sherman Hanna, Ohio State University[1]

The American Council on Consumer Interests was founded to advance the consumer interest, including promotion of research which would help consumer education and consumer policy. Although theoretical and empirical analyses can be important for consumer policy and education, it is important for maintaining ACCI's unique niche to focus on prescriptive consumer economics. There are other academic organizations focusing on consumer research or consumption economics, but ACCI is the only organization providing a forum for academic research relating to the consumer interest. There may, however, be a conflict between the needs of faculty at research universities, and the needs of consumers for advice and the needs of legislative bodies and administrative agencies for input on public policy. Organizations providing informal education to consumers, such as the Cooperative Extension Service, and mass media and textbook authors all have a great need for useful prescriptive consumer economics research. Unless such research is rigorous, academic researchers will not be rewarded for it.

This paper focuses on one approach to resolving the conflict between the practical needs of consumers and the driving force in academia. A rigorous yet useful approach may be obtained through the use of optimization models as a basis for prescriptive consumer economics. I have developed these ideas at greater length elsewhere (Hanna, 1989; Hanna, 1990). There is a need to be "prescriptive" in order to help consumers, because for many decisions, provision of information will not be sufficient to help consumers make optimal decisions. As Russo (1988) and others have suggested, consumers may be unable or unwilling to process information. Less educated consumers may be particularly unable and/or unwilling to search for and process information about complex products and services, even when there are clear benefits to the search (Chang & Hanna, 1992).

Economic theory has not seemed appealing as a source of insight about prescriptive consumer economics because the economic theory of the household has not really focused on normative implications for individual households, but rather on constructing a consistent theory to be used for explaining and predicting market demand for particular goods and services. Consider the usual budget constraints and indifference curves. If we assumed that all consumers shared the same preferences (identical sets of indifference curves), then it might be possible to derive optimal consumption patterns for goods for different price and income levels. However, for many goods, tastes obviously vary, and it is perfectly reasonable for two individuals with the same income and wealth to consume different levels of goods. This could be illustrated merely by drawing a different set of indifference curves. The usual assumption that consumers are behaving optimally is also hard to accept in a field concerned with helping consumers do better.

Russo (1988) discusses barriers to effective information use by consumers. These barriers may be important even for relatively simple consumer products. They may be insurmountable for most consumers for more complex products and for financial services such as insurance. The possibility that consumers may not behave optimally makes use of economic models for empirical analysis and prediction problematical, but does not preclude the use of economic models for prescriptive applications.

It may be useful to make an effort to define a consumer decision in terms of an optimization model even if the decision is too complex for rigorous solution. An optimization model can be described as:

1. an objective function (e.g., utility function),

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[1] Professor and Department Chair, Family Resource Management.

2. instruments (e.g., consumption level of each good),

3. constraints (e.g., budget constraints), and

4. normative rules (e.g., allocate income among goods so that the ratio of marginal utility to price is the same for all goods).

Economic theory has more obvious applications to business management than to consumer decisions, because the objective function of a firm is usually assumed to involve the maximization of profit. If profit maximization is considered as a static, one period process, and if information on marginal revenue and marginal cost is available, economics can provide clear guidance for business management. In the real world, this is not always possible, and many successful businesses have no guidance from economists. There are some technical problems of optimization amenable to quantitative analysis, such as inventory control problems, while there are other optimization problems, such as whether to introduce a new product, which are less quantifiable. There is a vast literature on optimal financial management. Agricultural economists have produced many recommendations for increasing farm profits.

Prescriptive applications for consumers have been limited to relatively narrow problems with obvious objective functions, such as how long you should keep your car or how much time should you spend shopping. Geistfeld (1990) has proposed use of decision-making aids to facilitate consumer choices. Some applications will require sophisticated use of utility functions.

Two factors have inhibited the use of economic theory for prescriptive consumer economics:

1. The idea that utility functions are so individual that it is impossible to make assumptions about any individual's utility function; and

2. The focus on using calculus and other mathematical techniques, which leads to unrealistic assumptions about behavior and constraints.

One example of how these factors can be overcome is the Life Cycle Savings Program (Hanna, 1989; Hanna, 1990; Chang, Fan & Hanna, 1991). This computer program has been used with 300 undergraduate students and is currently being tested with adult Cooperative Extension audiences to help them with an extremely complex decision: the optimal allocation of consumption over the life cycle. The program uses some standard simplifying assumptions, such as utility each year being based on the total real value of consumption each year, and lifetime utility being an additive function of each year's utility, discounted for risk of death and family size changes. The program can tailor advice to the particular situation of each household, yet can be used by unsophisticated consumers. A modified version of the program has also been used to generate complex hypotheses for empirical analysis of life cycle savings patterns (Lee & Hanna, 1992).

Chang, Fan & Hanna (1992) provide another example of how both potential problems can be addressed. The authors approach the question of optimal credit use with uncertain income by using a class of intertemporal utility functions. By assuming that utility is a function of total consumption per year, and providing intuitive explanations for the utility function parameters, the authors allow for a narrower range of individual differences. By using simulations to find the level of savings or dissavings that maximizes expected utility, the authors are able to specify a different interest rate for borrowing and saving. The results presented are original, and can be extended to more than two periods and more than two states of the world.

There is a potential for applying similar techniques to a variety of interesting consumer issues, with important implications for consumer education, consumer policy, and empirical research. Ultimately, prescriptive consumer economics research can provide useful input into consumer education, while serving the needs of academic researchers. Such research can also serve as a basis for expert systems software for consumers (Hanna, 1991). Research intended as prescriptive consumer economics can also improve theoretical and empirical research.

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Consumer Economics Professors Should Actually Profess Something

E. Thomas Garman, Professor[1]

In a recent speech an official of the International Monetary Fund, Alieu B. Demba, stated that "there is no room for ethical neutrality" for professors in higher education. Demba argues that professors can choose first by participating if efforts to transform the social and economic institutions of society. Second, professors can choose by trying to influence, cultivate, nurture, challenge and shape the minds of their students. Moreover, to be a professor in the United States is to be responsible for the logical implications of one's teaching.

Professors who choose not to offer normative views or at a minimum frame such problems and issures for academic debate for their students are not professing. Instead, they are merely practicing passive teaching.

The field of consumer economics lends itself quite naturally to effective utilization of a normative approach to teaching. Examples of prescriptive areas in consumer economics for professors to consider teaching include proper uses of credit, signals of credit overextension, ratio analysis of financial information, principles of wise buying to help obtain "best buys" for soncumers, responsibilities of consumers, marketplace ripoffs and misrepresentations (even though many are legal), rational steps in the buying process, efficient saving/spending decisions, societal concerns about the environment, cautions about personal consumption of tobacco and alcohol, housing affordability guidelines, legal tax avoidance, determining minimal insurance needs, and rules of thumb in retirement planning.[2]

To empower people to make effective decisions themselves, consumer economics professors should teach information and guidelines for consumption and also present altrenative approaches to resolving problems and issues that can be taken by individuals as well as by society at large. Professors who accept the challenge of teaching consumer economics in a normative manner are responsibly encouraging their students both to live better lives and advocating that the world do the same.

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[1] Virginia Polytechnic Institute & State University

[2] However, future prespects for the field of consumer economics are poor if history is illustrative because the consumer economics professors across the country have yet to agree upon definitions of key terms, scope and sequence of the undergraduate curriculum, targeted employers for graduates, or national accreditation standards for colleges and universities.

An Acronym to Help You Remember to Make Choices You Won't Regret

James N. Morgan, The University of Michigan[1]

After years of wondering why it was so difficult for students to think like economists, and after some experiments that showed they could handle ideas one at a time but not all at once, we developed a mnemonic device to help people apply the logic of benefit-cost analysis systematically.

The economic logic of cost-benefit analysis often seems unrealistic for the complex choices we have to make. What we propose is to show how to quantify in comparable (additive) terms as much as possible, leaving the chooser to decide whether the non-measurable preferences remaining for one alternative outweigh its measurable extra net costs. A check-list might help. If you dread finding later that you did the wrong thing, think of DREAD to remember what questions to ask beforehand. It is necessary to compare the benefits minus costs of each alternative, but they must both be:

DISCOUNTED to present values to make all amounts comparable, since money earns interest if you have it and costs interest if you owe it.

REAL, in current dollars, adjusting downward future amounts fixed in dollars for possible inflation. The real interest rate, after deducting inflation, tends to be 3%. Indeed, where costs and benefits will both go up with inflation, you need not predict inflation, or adjust for it. Just use the 3% real discount rate, and DREAD becomes DEAD.

EXPECTED values of uncertain benefits or costs, derived by multiplying them by the probability that they will occur. If there are alternatives, only one of which can happen, you can ADD their expected values!

AFTER TAXES, whenever the benefits are taxable income or the costs deductible for tax purposes, you want to multiply them by (1-marginal tax rate). The marginal tax rate is the percent of the last dollar of income that is taken in taxes. But state and federal taxes overlap, since the former can be deducted from income for federal tax purposes. Your combined marginal tax rate is State MTR + FedMTR(1-StateMTR).

DOLLAR amounts, converting non-money ones as much as possible into dollars through "imputation" or "opportunity cost". What would the money tied up have earned elsewhere? How much less will it be worth a year later (depreciation)?
Most, including imputed net rent on home, are untaxed.

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[1] Emeritus Professor of Economics

Thoughts for the 21st Century:
The Payoff to Intelligent Consumer Purchase Decisions

E. Scott Maynes, Cornell University[1]

This paper seeks to provide in a single article as much sound purchase advice as possible. Its spirit is normative, telling the consumer what he/she should do to maximize his/her satisfaction from purchases, given his or her preferences. The article is an update of the author's 1969 article in the Journal of Home Economics (Maynes, 1969) and Ch. 2 of his 1976 book (Maynes, 1976). Purchase advice, taking into account price and quality, is given under two conditions: perfect information and imperfect information. The author's prescriptions will accommodate "satisficers" if these are interpreted to be individuals (1) with high search costs or (2) low tolerance for perfection. The reader is warned that this is an article-in-the-making, hence it is presented in outline form.

I. This Paper

  A. An Update of:

    1. My Journal of Home Economics article (Maynes, 1969)
    2. Ch. 2 of Decision-Making For Consumers (Maynes, 1976).

  B. Goals

    1. To help household purchasing agents function more effectively;
    2. To embody in a single article as much sound purchase advice as possible.

  C. The Reader's Role

    1. This is not a finished product; it is an article-in-the-making.
    2. I invite your suggestions, positive and negative.
    3. I invite your patience. Necessarily, some of this is "old hat." What I am trying to do is to distill that which is central and useful--adding, discarding, and modifying as appropriate.

II. Payoffs, Costs, and the General Rule

  A. Payoffs to Search

    1. A search is "each attempt to secure and act on information regarding the product."

    2. Payoffs to search include:

      1. Obtaining lower prices, quality constant;
      2. Attaining better quality, price constant;
      3. Achieving your desired trade-off between price and quality;
      4. Securing the set of features/accessories that fit your needs;
      5. "Winning"--the extra satisfaction that comes from feeling that you have done well in purchasing, perhaps "beating the system."

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[1] Professor
Consumer Economics and Housing

3. This analysis focuses on (1), (2), and (3).

B. Costs of the Search

1. Cf. (Maynes, 1976), pp. 19-20.

2. Both objective and subjective costs are real and must be taken into account for search to be "correct."

C. The General Rule: How Many Searches?

1. The general rule--the economist's "marginal rule":

   Keep making searches as long as the expected gross payoff from an additional search exceeds the expected marginal cost of the search.

2. The spirit of the rule: utility or satisfaction maximization.

   a. This approach accommodates "satisficers." Satisficers are individuals whose subjective search costs are high.

III. Purchase Decisions Under Perfect Information

A. Assumptions and Concepts

1. The purchaser possesses accurate price-quality maps of the local market for the product under consideration, compiled under the assumption of full information and full understanding. Cf. (Maynes, 1976) for a detailed explanation of price-quality maps. Cf. Figure 1 for an illustrative map of the local market for Panty Hose.

2. The price depicted on these maps is the single, lowest price that a retailer will honor for all customers.

3. Quality consists, arithmetically, of a weighted average of utility-conferring characteristics such as comfort, safety, durability. In words, quality consists of the extent to which a variety of a product, a brand-model combination, provides the characteristics that the consumer desires.

4. All consumers accept the quality assessments as accurate and complete.

B. The Purchase Decision

1. Why analyze choice under the unrealistic assumption of Perfect Information? Because it instructs.

2. The goal of the utility-maximizing consumer: the Perfect Information Frontier (PIF): by definition, the set of lowest prices for each level of quality.

3. Where on the PIF?

   a. At the price-quality trade-off that suits you best;
   b. Formally, where

$$G_k^{ij} = \frac{\sum_{m=1}^{M} W_m^{ij} \bullet Ch_{km}^{ij}}{\sum_{m=1}^{M} W_m^{ij}}$$

where: G_k^{ij} = the quality of the kth variety of the jth product class as assigned by the ith individual

the

W_m^{ij} = the weights assigned to the mth characteristic in the jth product class by the ith individual

Ch_{km}^{ij} = the characteristic score assigned to the mth characteristic of the kth variety in the jth product class by the ith individual

In words, the intelligent consumer seeks to allocate his income among products and varieties of products so that every dollar spent yields the same increment of quality.

c. Would a rational consumer ever purchase an above-PIF variety? Yes, because these charts are location-specific and it could be that on-frontier varieties are only purchasable from retailers whose location is inconvenient.

C. Lessons From Charts (only Figure 1 is shown)

1. For varieties of uniform quality, search only for the lowest price.

2. Often the PIF has a modest slope, implying that a "large" increase in quality may be obtained for a "small" increase in price. On some price-quality maps the PIF even consists of a single point: the best quality is offered for the lowest price.

a. Many people find this implausible, feeling that higher quality must involve higher costs and hence higher prices. There are two flaws in this view. First, the technology and productive processes are so complex that there is no guarantee that greater outlays will yield greater quality. Second, on price-quality maps we are dealing with retail prices that are often quite independent of manufacturers' or wholesalers' prices.

3. Where can a consumer find price-quality maps? The sad story is that there is no organization that produces and distributes price-quality maps and the information behind them. For a blueprint of a "Local Consumer Information System" that would do just this, cf. (Maynes, Morgan, Vivian and Duncan, 1977).

IV. The Norm: Purchase Decisions Under Imperfect Information

A. Chaos: The Daunting Reality of Most Consumer Markets

1. In a perceptive article published 33 years ago Professor Ruby Turner Morris and her student, Claire Sekulski Bronson, documented the "chaos" of local consumer markets. (Morris and Bronson, 1969). By this they meant the near-zero correlation they observed between the rankings of list prices and quality.

2. More recently, Loren Geistfeld (1988, p. 169), summarizing his masterful review of the extensive research on the price-quality relationship since Morris and Bronson, carefully concluded: "Existing research suggests that consumer markets are not working well as indicated by weak price-quality relationships."

3. Since 1969 my students have prepared hundreds of price-quality maps for a wide range of products and services. The dominant perception: chaos, i.e., near-zero correlations between price and quality.

a. Cf. Figure 1, depicting the price-quality relationship for Panty Hose, as an example. Cf. (Maynes 1991) for other price-quality maps.

B. Assumptions

1. As noted earlier, there exist no "local consumer information systems" that produce and disseminate price-quality maps.

2. The closest substitutes:

   a. Consumer Reports which assesses quality for 60 to 70 products per year. Even for these products, Consumer Reports provides limited and insufficient information on price--publishing not the price offered for a variety by each local retailer and not the identity of local retailers selling each variety tested , but instead list, average, or a range of prices.

   b. The Mobil, Michelin, and other travel guides do provide approximate quality and price information for a representative set of hotels, motels, and restaurants across the U. S.

   c. The Washington Consumers' Checkbook (199X) and Bay Area Consumers' Checkbook (San Francisco) offer good data on quality and approximate data on about 25 services per year in the Washington and San Francisco Metropolitan Areas.

3. Hence, the consumer is "on his own" in searching for information in chaotic markets.

C. Some Signals and Rules-of-Thumb That Do Not Work

1. "Price is an indicator of quality" or its cousin, "You get what you pay for."

   a. These rules, so widely accepted, are valid only in workably competitive markets, e.g., a farmers' market or the New York Stock Exchange.

   b. These maxims will not work in markets characterized by the "weak" price-quality relationships" that Geistfeld (1988, p. 169) sees as the norm.

2. "Always buy at a 'low-priced outlet,' a 'discount store' or similar retail outlet."

   a. Finding, based on hundreds of price-quality maps: there is no such thing as a "low-priced" or "high-priced" outlet. Most retailers tend to offer some varieties on or near the PIF, some in a middling region, and some far above the PIF.

   b. As an example, consider the price-quality map for Panty Hose--Figure 1. Woolworth's, often thought to be a "low-priced" store, offers Variety I on the PIF, J--an inferior variety--at a somewhat higher price, M at twice the frontier price, and G--another inferior variety--at three times the frontier price. Rite Aid, a mass market chain drugstore, offers the best quality variety of Panty Hose, K, at the lowest price, thus placing it on the PIF. But Rite Aid also sells Variety N at twice the frontier price, G and M at three times the frontier price. Three posh stores--J. W. Rhodes, Iszards, and Holly's--sell Variety C at five times the frontier price. But they also offer Variety A at only twice the frontier price.

   c. Explanation. A classic article by Oxenfeldt (1973) delineated twenty different strategies that a retailer might follow in setting its prices. When each store follows its own strategy in setting prices and faces different parameters --different costs or price elasticities--in executing its strategy, this produces a wide range of prices. In the informationally imperfect markets that Geistfeld finds predominant, consumers are unable to obtain and act upon information so as to cause prices (quality constant) to converge.

D. The Purchase Decision

1. The Marginal Rule (II-C) remains our fundamental guide: Keep making searches as long as the expected gross payoff exceeds the expected marginal cost of each search.

   a. In turn, the expected gross payoff will depend upon (1) the distribution of prices, quality constant, that the consumer faces, and (2) the efficiency of his search. In (2) and (3) we turn to each of these.

   b. As to costs, it is rational for the intelligent consumer with "high" search costs to search less. This holds whether his high search costs are attributable to objective costs--he doesn't own a car--or subjective costs--he has a strong distaste for shopping.

2. But the central question still remains: what price reduction can I expect per search?

   a. Lacking further information, the consumer should expect to encounter the same relative price dispersion, quality constant, that Maynes-Assum found in their 1982 study (Maynes and Assum 1982).

      (1) Table 1 shows this dispersion and expands it for representative outlays of different sizes.

      (2) Although I have made no formal estimates of the shape of the distribution from the hundreds of price-quality maps prepared by my students, it is my strong impression that it is "normal."

   b. Clearly, price distributions like this pose enormous scope for gain or loss.

4. How many searches should the intelligent consumer undertake?

   a. At least three, unless one is content, for this product, to wind up far above the PIF.

   b. However many searches the consumer judges appropriate on the basis of Table 1, he should search more when:

      (1) An item looms relatively large in the long-run household budget, i.e., a "big-ticket" item, e.g., a large TV, or a "small-ticket" item purchased repeatedly, e.g., gasoline.

      (2) When the consumer is less affluent rather than more affluent;

      (3) When the cost of the search is "low":

      (4) When "winning" is important;

      (5) When, with respect to price discrimination, it is possible to:

         (a) Take advantage of it;
         (b) Initiate it.

E. Some Helpful Insights That May Make Your Search More Effective

1. Price and Product Discrimination

   a. Defined:

      (1) Price Discrimination occurs when "a single seller charges different customers different prices for the same product." Examples: Senior Citizens discounts, "weekend specials" (on anything!.

(2) Product Discrimination, logically equivalent to price discrimination, occurs when "a single seller offers different variants of the same product to different customers for the same price." Examples: a hotel gives you a suite instead of a double; the seller includes a battery with the sale of a camera for one customer, but not for another.

b. Its Prevalence: The Forms It Takes

(1) Every genuine sale or "special";
(2) Every instance of bargaining;
(3) Coupons: cents-off, 2-for-1, double couponing, rebates, cash coupons;
(4) Off-peak discounts: movies, travel tickets, "early bird" specials, lunch vs. dinner prices, off-season discounts, etc.
(5) Discounts to members of organizations (employers, churches, fraternal organizations, professional organizations, credit unions, etc.) on car rentals, air tickets, insurance, prescription etc.;
(6) Loyalty clubs: lists of longstanding and former customers, "Frequent Flyers," similar arrangements.
(7) Product discrimination:
    (a) Including "free" ancillary services, added features, or a higher level of quality for the same price;
    (b) Upgrades.

c. Consumers May Initiate Price Discrimination

(1) 'Ask and it shall be given you; seek and ye shall find; knock, and it shall be opened unto you." (Matthew VII, 6) As this Biblical injunction suggests, the intelligent consumer can take the intiative in seeking a lower price.

d. Implications for consumers: payoffs!

e. For an exhaustive treatment of price discrimination from the consumer viewpoint, cf. (Maynes, 1990). For a formal and sopphisticated survey of price discrimination in most of its facets--but not from the consumer viewpoint, cf. (Phlips 1983).

2. The number of sellers effect

a. As the number of manufacturers and/or retailers increases, expect more variation in price, quality constant. Hence, search more.

b. This is the opposite of the Economics 1 lesson that perfect competititon yields a single, low price.

3. Product Differentiation refers to the actions of sellers to make their variety of a product different and better or to make their variety appear to be different and better. Thus, differences may be real or imagined. Is Chanel Numero Cinq a really superior fragrance?

a. Aware of this concept, intelligent consumers will skeptically try to discover whether claimed differences are real or imagined, and--if real--whether the improved quality merits the higher price usually asked.

b. Example. The knowing know that Bayer aspirin is identical to other aspirins, Bayer's claims notwithstanding. They will not be surprised to learn that buyers of Bayer's pay twice as much as buyers of other brands. And, of course, they will not be caught dead buying Bayer's.

4. Monopolies broadly construed, meaning one or few sellers of the same product, are still with us. Implications for search:
    a. If the monopoly is real, reduce your search. There can be no payoff.
    b. But the intelligent consumer will be aware of substitutes. Consider air travel from Ithaca International. There are three airlines, drastically narrowing search, until one recalls that Syracuse is a not-too-distant substitute and that one can travel by bus, car (one's own or others'), bicycle, or hitchhike.
5. Price Fixing.
    a. Explicit price-fixing by presumed competitors is rare these days. But a search that uncovers different retailers charging identical prices for identical varieties should be instructive: call off further search.

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Table 1
Expected Price Distribution Under Imperfect Information

		Applied to Product with				
Highest Price As Percent of Lowest Price	Percent Dist. of Prices	Low Price of[b] $5	100	500	1,000	5,000
100% to 129%	23%	$6	$120	$600	$1,200	$6,000
130 to 149%	12%	7	140	700	1,400	7,000
150 to 19%	23%	8.75	175	875	1,750	12,250
200% or more (250)	42%	12.50	250	1,250	2,500	12,500
	100%					

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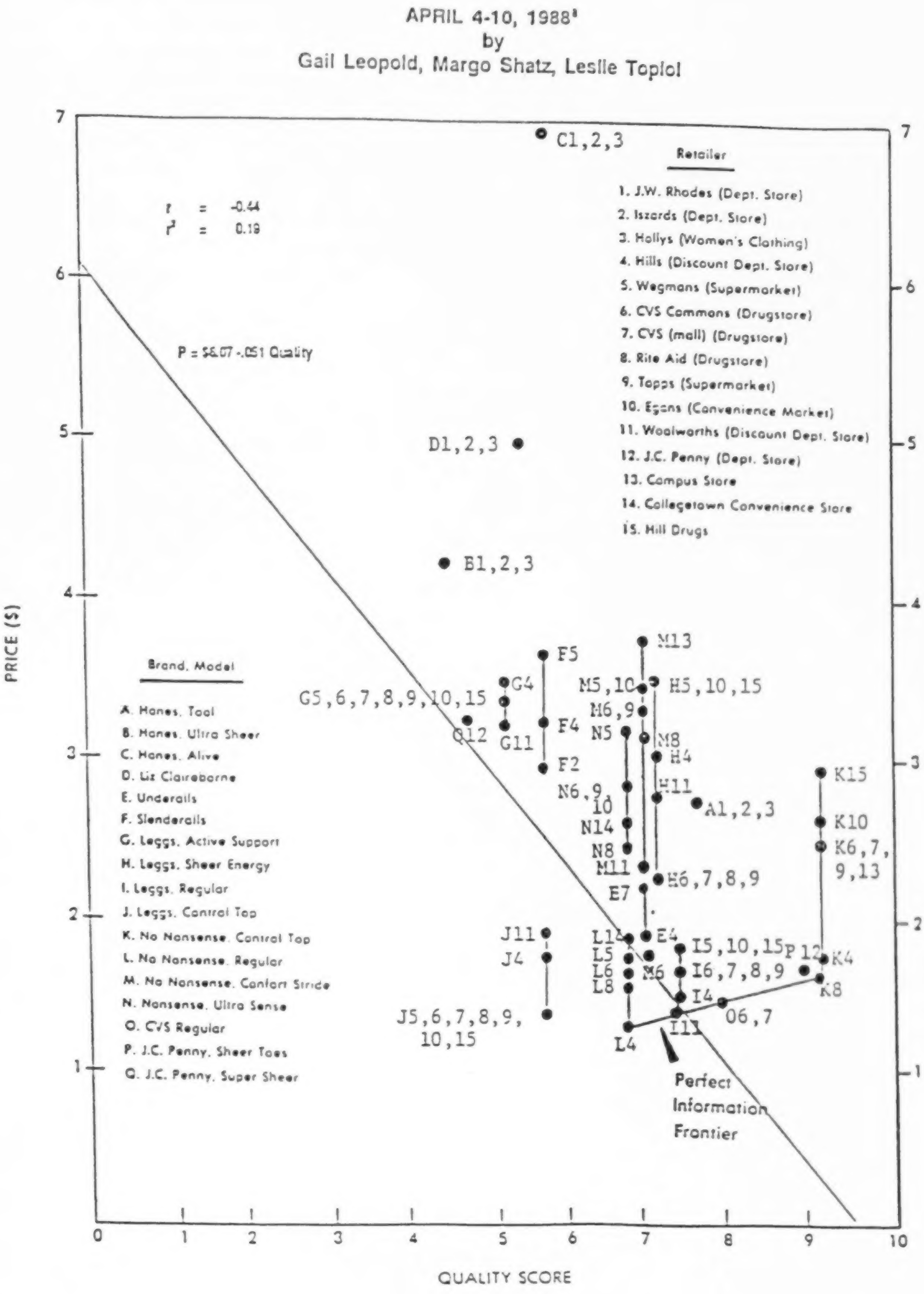
[a] Maynes and Assum (1982), Table 2.

[b] Values are based on midpoints of the distribution in the stub.

Figure 1
The Market For Panty Hose, Ithaca, N.Y.



Comments On Prescriptive Consumer Economics

Michael L. Walden, North Carolina State University [1]

I welcome the chance to comment on these four fine papers which deal with a very important topic. I think many journals have a bias against publishing papers with practical implications and recommendations. Personally, I've published my share of papers in JCA. However, recently one of my papers was rejected because it didn't test hypotheses. How silly and dangerous. Surely there's room in ACCI for papers emphasizing practical recommendations as well as those which empirically test models of behavior.

Now on to the papers! Professor Garman gives us a strong challenge in recommending that consumer economists should profess something. I agree that we must be involved in helping solve the resource allocation problems of our clientele. Professor Garman leaves open the issue of what norms and standards consumer economists should use in their "professing." My own answer to this issue is that consumer economists should profess the standards and concepts which are found in microeconomic and macroeconomic theory. These theories and concepts are the guides which I use in making consumer prescriptions.

The Morgan and Maynes papers represent the "state of the art" of prescriptive consumer economics. Morgan's DREAD acronym is a clever reminder of key economic concepts which should be used in consumer decision-making. I particularly like the "R" (real) reminder as it applies to savings goals. For long-run savings (e.g., saving for retirement, saving for a college education), it's impossible to predict the ultimate nominal dollar cost of the good or service, because it's impossible to predict inflation over such a long time period. It makes much more sense, as Morgan states, to use a real interest rate (e.g., 2 or 3%) to calculate savings requirements. For an outline of such a procedure as applied to education savings and retirement savings, see my text, (Walden, 1992, pp 497-503 and 513-524).

Let me make a couple of comments about Morgan's statements regarding homeownership. The housing market has been hit, and appreciation rates lowered, during the 1990-91 recession. In fact, relative to the decline in real Gross Domestic Product, homeownership has been hit harder during the 1990-91 recession than during the 1981-82 recession. I suspect part of the reason is the reduction in the federal marginal income tax rate. Also, the interest and property tax deductions associated with homeownership will be hurt in the future due to the indexing of the standard deduction (see Walden, Economics and Consumer Decisions, 1992, p. 163).

The updated Maynes paper continues to use excellent techniques and make excellent recommendations on smarter shopping. It's the application of techniques like these, or proxies to them, by consumers that keep markets competitive (there is a social payoff, as Maynes states).

I do, however, have some concern about Maynes' examples. Maynes fails to account for store characteristics and location in his price/quality correlations. Stores with more accessible locations and better amenities will be able to charge higher prices for all quality products. Also, there are many policy provisions which Maynes doesn't account for that can influence the premiums for term insurance. We need an extension of Maynes' work which adjusts the price/quality correlations for store locations and amenities and for all product characteristics.

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[1] Professor, Department of Agricultural and Resource Economics.

The Hanna paper represents the next frontier in prescriptive consumer economics. Hanna is quite correct in stating that some of the more interesting practical questions regarding optimal saving and borrowing behavior require the use of utility functions. I applaud Hanna for developing this practically-oriented research agenda, and I recommend this agenda to other economist researchers.

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The ERIC Database: Information for the Asking!

Judith O. Wagner
ERIC Clearinghouse on Adult, Career, and Vocational Education

Abstract

ERIC is a national education information system sponsored by the Office of Educational Research and Improvement, U.S. Department of Education. The goal of ERIC is to identify, select, process, and disseminate information in all areas of education. ERIC consists of 16 clearinghouses, each serving a specialized field of education. The ERIC system offers a number of information services including monthly abstract journals, microfiche and paper copies of materials, review and synthesis papers, and computer searches.

Description

ERIC is the world's largest and most comprehensive education database. Since 1966, ERIC has been collecting and making available all types of materials in all areas of education. ERIC is sponsored by the Office of Educational Research and Improvement, U.S. Department of Education. It consists of 16 subject-oriented clearinghouses, 3 adjunct clearinghouses, and support services. Of particular interest to consumer affairs educators is the ERIC Clearinghouse on Adult, Career, and Vocational Education (ERIC/ACVE) located at The Center on Education and Training for Employment at The Ohio State University and the Adjunct ERIC Clearinghouse on Consumer Education located at the National Institute for Consumer Education.

ERIC identifies, solicits, abstracts and indexes, and makes available "fugitive" materials--those that have been developed with public funds by an agency for its own use. This includes curriculum developed by a school district, reports of research done by an R&D center, conference proceedings, descriptions of classroom practices, program evaluations, conference presentations, and "how we made it work" papers.

User Services

User Services at ERIC/ACVE include disseminating publications, answering questions, conducting computer searches, and referring clients to other agencies. ERIC/ACVE user products include ERIC Digests, Practice Application Briefs, Trends and Issues Alerts, and bibliographies. These are available at no cost to the user. The ERIC Clearinghouse on Adult, Career, and Vocational Education will provide materials and information to suit your needs. If appropriate, a computer search of the ERIC database might be run. If the information you need is not available from ERIC/ACVE, you will be referred to the appropriate source.

Publications

In addition to the no-cost resources listed above, ERIC/ACVE produces several major publications each year. Topics for these monographs are selected with the help of our advisory committee, our ERIC Partners, and other constituents.

Submitting Documents to ERIC

In order to maintain the ERIC database, it is necessary for those in the field to provide us with materials! Please submit your materials to ERIC/ACVE for possible entry into the database.

How Can I Use ERIC?

Access to ERIC is provided at most university libraries, state departments of education, state libraries, and teacher centers. It is even available to you through your home computer! Typically you can do your own search, with or without assistance, or you can have someone do it for you. ERIC is available in print (***Resources in Education*** (RIE) and ***Current Index to Journals in Education*** (CIJE)), through online searching, and on CD-ROM.

To learn more about the ERIC system and the ERIC Clearinghouse on Adult, Career, and Vocational Education, please write to the User Services Coordinator, ERIC/ACVE, 1900 Kenny Road, Columbus OH 43210-1090.

The Global Consumer Movement

Gerda Hellman, IOCU[1]

I am honored to present this speech. Esther Peterson has done a lot on Consumer Policy in the U.S. I do not know much about that, I do know that she did a lot for IOCU on the global level.

Introduction

- What does it mean to have a global consumer movement?
- What difference does it make to consumers all over the world?

1. IOCU at a glance

- Founded in 1960 by 5 private consumer organizations (Consumers Union/Consumers Association/Consumentenbond/Australian Consumers Association/Verbruikersunie) in an office in The Hague.
- Now after 30 years members in 68 countries - more than 170 organizations. Associate members - corresponding members - supporting member. ACCI has been Associate member since 1963.
- Members are in the first place private organizations (NGO). They are non profit, independent from industry, (no advertisements) non-party political. There are also members who are government sponsored or departments (corresponding members).
- Structure: General Assembly - Council - Executive.
- Office to carry out work. Director-General - 3 Regional Offices: ROAP/ROLAC/ROENA (office for industrialized countries)
- Where does the money come from?:
  Membership fees;
  Funds - development.

2. IOCU is umbrella organization founded to:

- coordinate interests of consumer organizations (service/support) e.g. seminars, working group meetings, formulate policy.
- develop consumer movement areas where it does not exist. e.g. now we have the Africa Programme - Eastern Europe Programme. New groups have to come up in Central and Eastern Europe.
- represent the consumer interest at global level, e.g. observer status at UN-ECOSOC, WHO, etc.

All three Regional Offices have to develop a programme which follows these aims. Differences in work - development work ROAP (Asia & the Pacific)/ROLAC (Latin America & the Caribbean).

3. What does the workprogramme look like.

- We have basic services - World Consumer - Members List - Consumer Directory - WCRD-KIT.
- Consumer issues: food, trade, health, environment, poverty/debt issue. Tools like: comparative testing, consumer education
  e.g. food issue:
  - service/support, make people meet/define policy
  - develop
  - information
  - represent Codex Alimentarius FAO/WHO.

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[1] Director, Regional Office for Europe & North America

4. Policy: Why is it important to have a policy? How does it work? A policy document is a help for consumer organizations (basic principles). Example for good is given:
   * represent consumer interest at national level. Important that we say the same thing.
   * global level food standards Codex Alimentarius (e.g. food additives) regional level e.g. Europe.
   * national representatives of government meet IOCU representatives/own representatives
   * reporting back to IOCU - national consumer organizations - national representatives, we say the same thing = coordination.

Other examples:

5. Drug promotion - University of Groningen (Netherlands). Role for academics. World gets smaller every day - communication - global trade - global economy. National thinking is not enough. We have to go international. with regulations governing pharmaceutical products.

6. Consumer Protection is our ultimate goal. I think we all agree that to educate and inform consumer is not enough. There are certain basic rights of the consumer which have to be protected by law. Basic framework: UN Guidelines, adopted in 1985 unanimously. Guidelines - no law but we have worked with it (TOOL). We ask our members to approach government, Consultations Latin America - Asia. Many governments use guidelines as framework, Eastern Europe, e.g. WCRD kit. .

   ICOU influences consumer protection in various countries. Each country uses it in its own way.

7. Consumerism is often seen as how to buy your TV, Washing Machine, etc. But for us in IOCU and in particular for our members in developing countries it is such more: it has to do with development work. Consumption is related to development. Environmental problems: a lot to do with consumerism. Consumption is by definition related to environment and recognized by UNCED. We need to define our roles as consumer organizations.

8. Code of Conduct has to do with development and environment. Chapters on aspects: Consumption and Environment. Welcoming of Transnational Corporations (TNC's) in developing countries - rules for TCN's to take care of environment. Responsible TNC's have no problems.

9. To work on all these issues it is necessary to have a clear identity and work towards a high profile. Who are we?: in relation to business, in relation to governments (public goods and services).

   We are clear on our relation to business; clarity towards governments is more difficult.

   There are many consumer organizations: government bodies - private consumer organizations.

10. Closing

   * What does it mean to have a global consumer movement?
   * To be part of global consumer movement - know that in other countries this also works. To share experiences it required solidarity of the members; give and take.
   * Does it make a difference to consumers all over the world? by the examples I gave, I hope you agree with me that it definitely makes a difference. By creating - basic consumer legislation;
     - supplying information to consumers;
     - creating awareness e.g. seek redress;
     - in development work and environmental policies.

   * Esther has been at the cradle of the Guidelines which are the basic document for consumer protection. She is also both in the U.S. and internationally the consumer advocacy champion.